

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Jeff EDER

Serial No.: 09/761,670

Filed: October 17, 2000

For: A METHOD OF AND SYSTEM FOR EVALUATING CASH FLOW AND ELEMENTS OF A BUSINESS ENTERPRISE

Group Art Unit: 3692

Examiner: Sigfried Chencinski

Brief on Appeal

Sir or Madam:

The Appellant appeals the rejection of claim 43, claim 44, claim 45, claim 46, claim 48, claim 49, claim 50, claim 51, claim 52, claim 54, claim 55, claim 56, claim 57, claim 58 claim 59, claim 60, claim 61, claim 62, claim 63, claim 64, claim 65, claim 66, claim 67, claim 68, claim 69, claim 70, claim 71, claim 72, claim 73, claim 74, claim 75, claim 76, claim 77, claim 78, claim 79, claim 80, claim 81, claim 82, claim 83, claim 84, claim 85 and claim 86 in the January 3, 2007 Office Action for the above referenced application.

This Brief on Appeal is responsive to the Office Communication mailed July 22, 2009. It is worth noting that the July 22, 2009 Office Communication contains an incorrect statement. An Examiner's Answer was previously supplied on January 9, 2008 in response to a previously filed Brief on Appeal.

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1. Real party in interest

Asset Reliance, Inc. (dba Asset Trust, Inc.) is the assignee of 100% interest in the above referenced patent application.

2. Related appeals

An Appeal for U.S. Patent Application 10/166,758 filed on June 12, 2002 may be affected by or have a bearing on this appeal. An Appeal for U.S. Patent Application 10/743,417 filed on December 22, 2003 may be affected by or have a bearing on this appeal. An Appeal for U.S. Patent Application 10/750,792 filed on January 13, 2004 may be affected by or have a bearing on this appeal. An Appeal for U.S. Patent Application 11/278,419 filed on April 1, 2006 may be affected by or have a bearing on this appeal.

3. Status of Claims

Claim 43, claim 44, claim 45, claim 46, claim 48, claim 49, claim 50, claim 51, claim 52, claim 54, claim 55, claim 56, claim 57, claim 58, claim 59, claim 60, claim 61, claim 62, claim 63, claim 64, claim 65, claim 66, claim 67, claim 68, claim 69, claim 70, claim 71, claim 72, claim 73, claim 74, claim 75, claim 76, claim 77, claim 78, claim 79, claim 80, claim 81, claim 82, claim 83, claim 84, claim 85 and claim 86 are rejected and are the subject of this appeal. No other claims are pending. Claims 1 – 42, 47, 53, 87 and 88 have previously been cancelled without prejudice.

4. Status of Amendments

Claim 80 was amended on April 20, 2009 to obviate a claim objection and put the application in a final form for allowance and issue.

5. Summary of Claimed Subject Matter

One embodiment of a method of and system for evaluating cash flow and elements of a business enterprise according to the present invention is best depicted in Figure 1 – 12 of the specification. Figure 1 gives an overview of the major processing steps which include obtaining data for use in analysis and transforming the data into models of real world financial performance for a commercial enterprise using the data.

Independent Claim 43 - One embodiment of the method of and system for evaluating cash flow and elements of a business enterprise is exemplified in independent claim 43 where a computer system obtains a plurality of data representative of a business enterprise in a format suitable for processing and transforms said data into a plurality of network models that have utility in completing forecasts. Support in the specification for this claim is detailed below:

- a) a computer with a processor having circuitry to execute instructions; a storage device available to said processor with sequences of instructions stored therein - the computer system and stored instructions are described in FIG. 3, reference numbers 100, 110 – 119, 120 – 128, 130 – 137, 200, 300, 400, 500, 600, 700, 800 and 900 and line 28, page 11, through line 27, page 13 of the specification. The activities that the stored instructions cause the processor to perform are detailed in the specification starting and line 28, page 13 through the end of the specification.*
- b) obtain a plurality of data related to a value of a business enterprise in a format suitable for processing - data from a plurality of enterprise management systems are prepared for use in model processing as described in FIG.1, reference numbers 200 and 300; FIG. 5A, reference numbers 10, 15, 30, 35, 40, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 212 and 213; FIG. 5B, reference numbers 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 232 and 235; FIG. 6, reference numbers 306, 307, 308, 309, 310, 312, 313, 315, 316, 317, line 15, page 10 through line 27, page 11 and line 15, page 15 through the end of page 40 of the specification. Aspects of the acquisition, conversion and storage of data in accordance with a common data dictionary are also described in line 40, column 35 through line 25, column 39 of cross referenced U.S. Patent 5,615,109.*
- c) evolve a plurality of network models for connecting one or more elements of value of said firm to one or more aspects of financial performance of said firm, said network models being further comprised of: input nodes, hidden nodes and output nodes where each input node represents an element of value and each output node represents an aspect of financial performance; and a plurality of relationships between said nodes, each said relationship being characterized by a degree of influence from one node to another; said degree of influence being dependent upon an impact of the element of value represented by said node and its interrelationship with other elements of value –The general procedure for model evolution and the evolution of a network model for revenue is described in FIG. 8A, reference numbers 501, 502, 503, 504, 525, 530, 535, 540, 545 and 550, FIG. 9 and line 5, page 44 through line 30, page 49 of the specification. The evolution of network models for expense is described in FIG. 8B, reference numbers 505, 507 and 508, 525, 530, 535, 540, 545 and 550, FIG. 9 and line 31, page 49 through line 17, page 50 of the specification. The evolution of network models for capital change is described in FIG. 8C, reference numbers 511, 513, 514, 525, 530, 535, 540, 545 and 550, FIG. 9 and line 20, page 50 through line 8 page 51 of the specification. The evolution of a network model for cash flow is described in FIG. 8D reference numbers 571, 572 and 573, 525, 530, 535, 540, 545 and 550, FIG. 9 and in line 10, page 51 through line 3, page 52 of the specification.*
- d) where each network model from a plurality of network models supports the development of a*

controlling forecast for use in optimizing purchasing. The use of a controlling forecast to optimize purchasing related activities is detailed on column 25, line 61 through column 27, line 49 of cross referenced U.S. Patent 5,615,109.

Claim 44 - The limitations associated with dependent claim 44 are described in a number of places including FIG. 5A reference numbers 206 and 207 and line 15, page 26 through line 16, page 27 of the specification; FIG. 8A reference numbers 501 – 504, 525, 530, 535, 540, 545 and 550, line 5, page 44 through line 30, page 49 of the specification, FIG. 8B reference numbers 505, 507 and 508, 525, 530, 535, 540, 545 and 550 and line 31, page 49 through line 17, page 50 of the specification; FIG. 8C reference numbers 511, 513 and 514, 525, 530, 535, 540, 545 and 550 and line 20, page 50 through line 8 page 51 of the specification; and FIG. 8D reference numbers 571, 572 and 573, 525, 530, 535, 540, 545 and 550 and line 10, page 51 through line 3, page 52 of the specification and FIG. 9.

Claim 45 - The limitations associated with dependent claim 45 are described in line 10, page 16 – line 18, page 16 and Table 17, page 31 of the specification.

Claim 46 - The limitations and activities associated with dependent claim 46 are described in FIG 11A reference numbers 604, 607 & 610 and line 20, page 52 – line 5, page 55 of the specification. The act(s) comprises training best fit models and using the weights from the best fit models of each component of value to determine the relative contribution of each element of value using a structure comprised of a plurality of network models.

Claim 48 - The limitations associated with dependent claim 48 are described in FIG 5A reference number 202 and line 1, page 24 – line 6, page 25 of the specification.

Claim 49 - The limitations and activities associated with dependent claim 49 are described in FIG 11A reference number 611 and line 6, page 55 – line 14, page 55 of the specification. The act(s) comprises combining the relative contribution of each element of value to each component of value with the present value of each component of value to determine a value for each element of value.

Claim 50 - The limitations associated with dependent claim 50 are described in a number of places including Table 16, page 30 and Table 17, page 31.

Claim 51 - The limitations associated with dependent claim 51 are described in a number of places including FIG. 5A reference numbers 206 and 207 and line 15, page 26 through line 16, page 27 of the specification; FIG. 8A reference numbers 501 – 504, 525, 530, 535, 540, 545 and 550, line 5, page 44 through line 30, page 49 of the specification, FIG. 8B reference numbers

505, 507 and 508, 525, 530, 535, 540, 545 and 550 and line 31, page 49 through line 17, page 50 of the specification; FIG. 8C reference numbers 511, 513 and 514, 525, 530, 535, 540, 545 and 550 and line 20, page 50 through line 8 page 51 of the specification; and FIG. 8D reference numbers 571, 572 and 573, 525, 530, 535, 540, 545 and 550 and line 10, page 51 through line 3, page 52 of the specification and FIG. 9. The structure(s) comprises a plurality of neural network models that are trained with genetic algorithms.

Claim 52 - The limitations associated with dependent claim 52 are described in line 15 through line 17, page 15, line 24 and page 30 through line 3, page 32 of the specification. The structure(s) comprises a plurality of neural network models that use business event data for processing.

Independent claim 54 - A second embodiment of the method of and system for evaluating cash flow and elements of a business enterprise is exemplified in independent claim 54 where a process instructs a computer system to aggregate a plurality of data representative of a business enterprise and transform the data into a plurality of network models of said enterprise. Support in the specification for this claim is detailed below:

The computer system is described in FIG. 3, reference numbers 100, 110 – 119, 120 – 128, 130 – 137, 200, 300, 400, 500, 600, 700, 800 and 900 and line 28, page 11, through line 27, page 13 of the specification.

a) *aggregating firm related data from a plurality of systems in accordance with a common data dictionary* - data from a plurality of enterprise management systems are aggregated in accordance with a common dictionary as described in FIG.1, reference numbers 200 and 300; FIG. 5A, reference numbers 10, 15, 30, 35, 40, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 212 and 213; FIG. 5B reference numbers 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 232 and 235; FIG. 6 reference numbers 306, 307, 308, 309, 310, 312, 313, 315, 316, 317 and line 15, page 15 through the end of page 40 of the specification. Aspects of the aggregation of data in accordance with a common data dictionary are also described in line 40, column 35 through line 25, column 39 of cross referenced U.S. Patent 5,615,109.

b) *using at least a portion of the data to generate a plurality of network models which connect one or more current elements of value of said firm to one or more aspects of financial performance of said firm, said network models being further comprised of: one or more input nodes, hidden nodes and output nodes where each input node represents an element of value and each output node represents an aspect of financial performance, and a plurality of relationships where each relationship is a function of an impact of each element on other elements of value or an aspect of financial performance* - The general procedure for model evolution and the evolution of a network

model for revenue is described in FIG. 8A, reference numbers 501, 502, 503, 504, 525, 530, 535, 540, 545 and 550, FIG. 9 and line 5, page 44 through line 30, page 49 of the specification. The evolution of network models for expense is described in FIG. 8B, reference numbers 505, 507 and 508, 525, 530, 535, 540, 545 and 550, FIG. 9 and line 31, page 49 through line 17, page 50 of the specification. The evolution of network models for capital change is described in FIG. 8C, reference numbers 511, 513, 514, 525, 530, 535, 540, 545 and 550, FIG. 9 and line 20, page 50 through line 8 page 51 of the specification. The evolution of a network model for cash flow is described in FIG. 8D reference numbers 571, 572 and 573, 525, 530, 535, 540, 545 and 550, FIG. 9 and in line 10, page 51 through line 3, page 52 of the specification.

c) where each network model from a plurality of network models supports the development of a controlling forecast for use in optimizing purchasing. The use of a controlling forecast to optimize purchasing related activities is detailed on column 25, line 61 through column 27, line 49 of cross referenced U.S. Patent 5,615,109.

Claim 55 - The limitations associated with dependent claim 55 are described in a number of places including FIG. 5A reference numbers 206 and 207 and line 15, page 26 through line 16, page 27 of the specification; FIG. 8A reference numbers 501 – 504, 525, 530, 535, 540, 545 and 550, FIG. 9 and line 5, page 44 through line 30, page 49 of the specification, FIG. 8B reference numbers 505, 507 and 508, 525, 530, 535, 540, 545 and 550 and line 31, page 49 through line 17, page 50 of the specification; FIG. 8C reference numbers 511, 513 and 514, 525, 530, 535, 540, 545 and 550 and line 20, page 50 through line 8 page 51 of the specification; and FIG. 8D reference numbers 571, 572 and 573, 525, 530, 535, 540, 545 and 550 and line 10, page 51 through line 3, page 52 of the specification.

Claim 56 - The limitations associated with dependent claim 56 are described in line 10, page 16 through line 18, page 16 and Table 17, page 31 of the specification.

Claim 57 and 58 - The limitations and activities associated with dependent claims 57 and 58 are described in FIG 11A reference numbers 604, 607 & 610 and line 20, page 52 through line 5, page 55 of the specification. The act(s) comprise determining the net impact of each element of value on each component of value using network model weights and combining the impact of each element of value with the present value of each component of value to determine a value for each element of value.

Claim 59 - The limitations and activities associated with dependent claim 59 are described in the same locations identified previously for claim 44. The act(s) comprises training a plurality of network models by using genetic algorithms.

Claim 60 - The limitations and activities associated with dependent claim 60 are described in FIG 5A reference number 202 and line 1, page 24 through line 6, page 25 of the specification.

Claim 61 - The limitations and activities associated with dependent claim 61 are described in FIG 11A reference number 611 and line 6, page 55 through line 14, page 55 of the specification. The act(s) comprises combining the relative contribution of each element of value to each component of value with the present value of each component of value to determine a value for each element of value.

Claim 62 - The limitations and activities associated with dependent claim 62 are described in a number of places including Table 16, page 30 and Table 17, page 31. The act(s) comprise combining the relative contribution of each element of value with the present value of each component of value to determine a value for each element of value.

Claim 63 - The limitations associated with dependent claim 63 are described in a number of places including FIG. 5A reference numbers 206 and 207 and line 15, page 26 through line 16, page 27 of the specification; FIG. 8A reference numbers 501 – 504, 525, 530, 535, 540, 545 and 550, line 5, page 44 through line 30, page 49 of the specification, FIG. 8B reference numbers 505, 507 and 508, 525, 530, 535, 540, 545 and 550 and line 31, page 49 through line 17, page 50 of the specification; FIG. 8C reference numbers 511, 513 and 514, 525, 530, 535, 540, 545 and 550 and line 20, page 50 through line 8 page 51 of the specification; and FIG. 8D reference numbers 571, 572 and 573, 525, 530, 535, 540, 545 and 550 and line 10, page 51 through line 3, page 52 of the specification and FIG. 9. The structure comprises a plurality of neural network models.

Claim 64 - The limitations associated with dependent claim 64 are described in FIG 5A reference number 205 and line 12, page 26 through line 3, page 27 of the specification.

Claim 65 - The limitations associated with dependent claim 65 are described in line 15 through line 17, page 15, line 24 and page 30 through line 3, page 32 of the specification. The structure(s) comprises a plurality of neural network models that use business event data for processing.

Claim 66 - The limitations associated with dependent claim 66 are a number of places including FIG 1 reference numbers 5, 10, 15, 30, 35 and 40 and FIG. 5B reference number 222.

Independent Claim 67 - A third embodiment of the method of and system for evaluating cash flow and elements of a business enterprise is exemplified in independent claim 67 where an article of manufacture instructs a computer system to complete a method that integrates a plurality of data representative of a business enterprise and transforms the data into a plurality of

network models of said enterprise that have utility in completing forecasts. Support in the specification for this claim is detailed below:

- a) *A computer readable medium having sequences of instructions stored therein, which when executed cause the processor in a computer to perform a firm analysis method* - the computer system and computer readable medium are described in FIG. 3, reference numbers 100, 110 – 119, 120 – 128, 130 – 137, 200, 300, 400, 500, 600, 700, 800 and 900 and line 28, page 11, through line 27, page 13 of the specification. The activities that the computer readable medium causes the processor to perform are detailed in the specification starting and line 28, page 13 through the end of the specification.
- b) *integrating business related data for a firm using a common dictionary* - data from a plurality of enterprise management systems are integrated in accordance with a common data dictionary as described in FIG.1, reference numbers 200 and 300; FIG. 5A, reference numbers 10, 15, 30, 35, 40, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 212 and 213; FIG. 5B reference numbers 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 232 and 235; FIG. 6 reference numbers 306, 307, 308, 309, 310, 312, 313, 315, 316, 317, line 15, page 10 through line 27, page 11 and line 15, page 15 through the end of page 40 of the specification. Aspects of the acquisition, conversion and storage of data in accordance with a common data dictionary are also described in line 40, column 35 through line 25, column 39 of cross referenced U.S. Patent 5,615,109.
- c) *using at least a portion of the data to generate a plurality of network models which connect one or more elements of value of said firm to one or more aspects of financial performance of said firm, said network models being further comprised of: one or more input nodes, hidden nodes and output nodes where each input node represents an element of value and each output node represents an aspect of financial performance and a plurality of relationships where each relationship is a function of the impact of each element on other elements of value or an aspect of financial performance* - The general procedure for model evolution and the evolution of a network model for revenue is described in FIG. 8A, reference numbers 501, 502, 503, 504, 525, 530, 535, 540, 545 and 550, FIG. 9 and line 5, page 44 through line 30, page 49 of the specification. The evolution of network models for expense is described in FIG. 8B, reference numbers 505, 507 and 508, 525, 530, 535, 540, 545 and 550, FIG. 9 and line 31, page 49 through line 17, page 50 of the specification. The evolution of network models for capital change is described in FIG. 8C, reference numbers 511, 513, 514, 525, 530, 535, 540, 545 and 550, FIG. 9 and line 20, page 50 through line 8 page 51 of the specification. The evolution of a network model for cash flow is described in FIG. 8D reference numbers 571, 572 and 573, 525, 530, 535, 540, 545 and 550, FIG. 9 and in line 10, page 51 through line 3, page 52 of the specification.

d) where each network model from a plurality of network models supports the development of a controlling forecast for use in optimizing purchasing. The use of a controlling forecast to optimize purchasing related activities is detailed on column 25, line 61 through column 27, line 49 of cross referenced U.S. Patent 5,615,109.

Claim 68 - The limitations and activities associated with dependent claim 68 are described in a number of places including FIG. 5A reference numbers 206 and 207 and line 15, page 26 through line 16, page 27 of the specification; FIG. 8A reference numbers 501 – 504, 525, 530, 535, 540, 545 and 550, FIG. 9 and line 5, page 44 through line 30, page 49, FIG. 8B reference numbers 505, 507 and 508, 525, 530, 535, 540, 545 and 550 and line 31, page 49 through line 17, page 50 of the specification; FIG. 8C reference numbers 511, 513 and 514, 525, 530, 535, 540, 545 and 550 and line 20, page 50 through line 8 page 51 of the specification; and FIG. 8D reference numbers 571, 572 and 573, 525, 530, 535, 540, 545 and 550 and line 10, page 51 through line 3, page 52 of the specification. It is well known by those of average skill in the art that cash flow is related to market value.

Claim 69 - The limitations and activities associated with dependent claim 69 are described in line 10, page 16 through line 18, page 16 and Table 17, page 31 of the specification.

Claim 70 and 71 - The limitations and activities associated with dependent claims 70 and 71 are described in FIG 11A reference numbers 604, 607 & 610 and line 20, page 52 through line 5, page 55 of the specification. The act(s) comprise determining the net impact of each element of value on each component of value using weights from a best fit model and combining the impact of each element of value with the present value of each component of value to determine a value for each element of value.

Claim 72 - The limitations and activities associated with dependent claim 72 are described in the same locations identified previously for claim 44. The act(s) comprises training a plurality of network models with genetic algorithms.

Claim 73 - The limitations associated with dependent claim 73 are described in FIG 5A reference number 202 and line 1, page 24 through line 6, page 25 of the specification.

Claim 74 - The limitations and activities associated with dependent claim 74 are described in FIG 11A reference number 611 and line 6, page 55 through line 14, page 55 of the specification. The act(s) comprise combining the relative contribution of each element of value with the present value of each component of value to determine a value for each element of value.

Claim 75 - The limitations associated with dependent claim 75 are described in a number of

places including Table 16, page 30 and Table 17, page 31.

Claim 76 - The limitations associated with dependent claim 76 are described in a number of places including FIG. 5A reference numbers 206 and 207 and line 15, page 26 through line 16, page 27 of the specification; FIG. 8A reference numbers 501 – 504, 525, 530, 535, 540, 545 and 550, line 5, page 44 through line 30, page 49 of the specification, FIG. 8B reference numbers 505, 507 and 508, 525, 530, 535, 540, 545 and 550 and line 31, page 49 through line 17, page 50 of the specification; FIG. 8C reference numbers 511, 513 and 514, 525, 530, 535, 540, 545 and 550 and line 20, page 50 through line 8 page 51 of the specification; and FIG. 8D reference numbers 571, 572 and 573, 525, 530, 535, 540, 545 and 550 and line 10, page 51 through line 3, page 52 of the specification and FIG. 9. The structure comprises a plurality of neural network models.

Claim 77 - The limitations associated with dependent claim 77 are described in FIG 5A reference number 205 and line 12, page 26 through line 3, page 27 of the specification.

Claim 78 - The limitations associated with dependent claim 78 are described in line 15 through line 17, page 15, line 24 and page 30 through line 3, page 32 of the specification. The structure(s) comprises a plurality of neural network models that use business event data for processing.

Claim 79 - The limitations associated with dependent claim 79 are described in a number of places including FIG 1 reference numbers 5, 10, 15, 30, 35 and 40 and FIG. 5B reference number 222.

Independent Claim 80 - A fourth embodiment of the method of and system for evaluating cash flow and elements of a business enterprise is exemplified in independent claim 80 where a process instructs a computer system to access a plurality of enterprise related data via an interface coupled to a plurality of data sources, converts said data to a common schema using an application software segment and stores the data in a database (50) for later use in processing.

The computer system is described in FIG. 3, reference numbers 100, 110 – 119, 120 – 128, 130 – 137, 200, 300, 400, 500, 600, 700, 800 and 900 and line 28, page 11, through line 27, page 13 of the specification.

a) *accessing a plurality of data representative of enterprise via an interface coupled to a plurality of data sources, converting said data to a common schema using an application software segment, and storing said converted data in a database for use in processing* - data from a plurality of enterprise management systems are converted and stored in accordance with a

common schema as described in FIG.1, reference numbers 200 and 300; FIG. 5A, reference numbers 10, 15, 30, 35, 40, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 212 and 213; FIG. 5B reference numbers 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 232 and 235; FIG. 6 reference numbers 306, 307, 308, 309, 310, 312, 313, 315, 316, 317 and line 15, page 15 through the end of page 40 of the specification. Aspects of the aggregation of data in accordance with a common data dictionary are also described in line 40, column 35 through line 25, column 39 of cross referenced U.S. Patent 5,615,109. The plurality of data sources are identified in FIG. 1 and line 22, page 10 through line 25, page 10. The data comprise data regarding business events that have been logged or recorded including non-repetitive support calls, total support calls, products kept by customers, total products purchased by customers, non-repetitive service calls, total service calls, correct invoice line items, total invoice line items, months since last order, average months since last order, accounts receivable balance in days, average days to pay, ratio of new products purchased, ratio new products available, average percentage proprietary products purchased, proprietary products delivered percentage, months with orders, months since first order, standard hours, paid hours, good production, total production, implemented suggestions, total time employed, price premium, web site traffic trend and advertising average cost per 1000.

The enterprise definition and the definitions for revenue, expense and capital change are developed and stored as described in FIG. 5A reference numbers 206 and 207 and line 15, page 26 through line 16, page 27 of the specification. Because there is only one revenue component for each enterprise, the enterprise definition also defines the revenue component. These definitions are then combined with the previously developed information to guide the extraction, integration and storage of the financial data used to represent aspects of financial performance for model development as described in FIG. 5A reference number 210 and line 1, page 29 through line 17, page 29 of the specification. In a revenue model, the revenue data sets the value of the output node (730) for the network model by period as described in FIG. 8A, reference number 504 and line 26, page 46 through line 29, page 46 of the specification. In a similar fashion, the expense data sets the value of the output node (730) for expense models as described in FIG. 8B, reference number 508 and line 8 of page 50 of the specification and the capital change data sets the value of the output node (730) for capital change models as described in FIG. 8C, reference number 514 and line 32 of page 50 of the specification. The identity and definition of elements of value present in the business and the source(s) of data related to their performance are specified by the user as described in FIG. 5B reference number 221 and line 33, page 29 through line 31, page 30 of the specification. The element of value

definitions are combined with previously developed information to guide the integration and storage of the data used to calculate composite variables by period as described in FIG. 5B reference number 222 and line 5, page 32 through line 17, page 29 of the specification. Sub-elements of value are optionally enabled by the user. If sub-elements of value are enabled, then their number and identify are determined analytically as described in FIG. 6 reference number 316 and line 25, page 37 through line 29, page 39. After the processing is completed as outlined above, the extracted data have been converted and stored in accordance with a common schema.

Claim 81 - The limitations associated with dependent claim 81 are described in line 7, page 17 through line 34, page 17 of the specification. The structure comprises a plurality of relational databases.

Claim 82 - The limitations and activities associated with dependent claim 82 are described in FIG. 1 reference number 25 and line 21, page 10 through line 35, page 10 of the specification. The structure comprises a network connection.

Claim 83 - The limitations and activities associated with dependent claim 83 are described in FIG. 5A reference numbers 203, 205. FIG 9 reference number 703 and 710 and line 26, page 25 through line 10, page 26 of the specification.

Claim 84 - The limitations and activities associated with dependent claim 84 are described in Table 12, page 24, FIG. 5A reference number 210, FIG. 5B reference number 222, line 5, page 22 through line 17, page 29 of the specification. The conversion and storage of data is also described in line 40, column 35 through line 25, column 39 of cross referenced U.S. Patent 5,615,109. The act(s) comprise converting and storing data.

Independent Claim 85 - A fifth embodiment of the method of and system for evaluating cash flow and elements of a business enterprise is exemplified in independent claim 85 where a process instructs a computer system to identify the data required for analyzing a commercial enterprise, prepares the data for use in analysis, analyzes the data to identify a number of statistics before developing a model of enterprise current operation financial performance using said statistics and automated learning. Support in the specification for this claim is detailed below:

The computer system is described in FIG. 3, reference numbers 100, 110 – 119, 120 – 128, 130 – 137, 200, 300, 400, 500, 600, 700, 800 and 900 and line 28, page 11, through line 27, page 13 of the specification.

a) *identifying a set of data required for analyzing a commercial enterprise, preparing the identified*

set of data for use in analysis, analyzing at least a portion of said data in an automated fashion as required to identify one or more statistics selected from the group consisting of pattern, trend, ratio, average, elapsed time period, percentage, variance, monthly total and combinations thereof - data from a plurality of enterprise management systems are analyzed and prepared for use in model processing as described in FIG.1, reference numbers 200 and 300; FIG. 5A, reference numbers 10, 15, 30, 35, 40, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 212 and 213; FIG. 5B reference numbers 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 232 and 235; FIG. 6 reference numbers 306, 307, 308, 309, 310, 312, 313, 315, 316, 317, line 15, page 10 through line 27, page 11 and line 15, page 15 through the end of page 40 of the specification. Aspects of the acquisition, conversion and storage of data in accordance with a common data dictionary are also described in line 40, column 35 through line 25, column 39 of cross referenced U.S. Patent 5,615,109.

b) using at least a portion of said statistics and data to develop a model of enterprise current operation financial performance using automated learning - the general procedure for model evolution and the evolution of a network model for revenue is described in FIG. 8A, reference numbers 501, 502, 503, 504, 525, 530, 535, 540, 545 and 550, FIG. 9 and line 5, page 44 through line 30, page 49 of the specification. The evolution of a network model for cash flow which comprises a model of current operation financial performance is described in FIG. 8D reference numbers 571, 572 and 573, 525, 530, 535, 540, 545 and 550, FIG. 9 and in line 10, page 51 through line 3, page 52 of the specification.

c) where the model mathematically expresses the dynamic characteristics and behavior of each element of value as including direct effects and indirect effects from each element of value – as described in FIG 5B, reference number 222 and line 5, page 32 through line 9, page 32 of the specification, a value for each composite variable (which summarize the impact of each element of value) is calculated for every time period. This allows the model to capture the dynamic characteristics and behavior of each element of value. As described in FIG. 11A, reference number 604 and as shown in Formula 8 at the top of page 53, the model weights are used to quantify the direct and indirect effects from each element of value.

Claim 86 - The limitations and activities associated with dependent claim 86 are described in a number of places including FIG. 8A reference numbers 525, 530 and 535, and line 5, page 44 through line 30, page 49 of the specification, FIG. 8B reference numbers 525, 530 and 535 and line 31, page 49 through line 17, page 50 of the specification; FIG. 8C reference numbers 525, 530 and 535 and line 20, page 50 through line 8 page 51 of the specification; and FIG. 8D reference numbers 525, 530 and 535 and line 10, page 51 through line 3, page 52 of the specification;

specification. The act(s) comprise completing a number of automated learning steps that enhance the automated learning capabilities of the well known set of processing steps that are often completed by a neural net.

6. Grounds of rejection to be reviewed on appeal

Issue 1 - Whether claim 43, claim 44, claim 45, claim 46, claim 48, claim 49, claim 50 and claim 52 are patentable under 35 U.S.C. 103(a) over Sandretto (U.S. Patent 5,812,988)?

Issue 2 – Whether claim 54, claim 55, claim 56, claim 57, claim 58, claim 59, claim 60, claim 61, claim 62, claim 64, claim 65 and claim 66 are patentable under 35 U.S.C. 103(a) over Sandretto?

Issue 3 – Whether claim 67, claim 68, claim 69, claim 70, claim 71, claim 72, claim 73, claim 74, claim 75, claim 77, claim 78 and claim 79 are patentable under 35 U.S.C. 103(a) over Sandretto?

Issue 4 - Whether claim 80, claim 81, claim 82, claim 83, claim 84 and/or claim 85 are patentable under 35 U.S.C. 103(a) over Sandretto (U.S. Patent 5,812,988)?

Issue 5 - Whether claim 63 and/or claim 76 are patentable under 35 U.S.C. 103(a) over Sandretto (U.S. Patent 5,812,988) in view of Jost (U.S. Patent 5,361,201)?

Issue 6 - Whether claim 51 and/or claim 86 are patentable under 35 U.S.C. 103(a) over Sandretto (U.S. Patent 5,812,988) in view of Barr (U.S. Patent 5,761,442)?

Issue 7 - Whether the invention described in claim 43, claim 44, claim 45, claim 46, claim 48, claim 49, claim 50, claim 51 and claim 52, represents patentable subject matter under 35 U.S.C. 101?

Issue 8 - Whether the invention described in claim 54, claim 55, claim 56, claim 57, claim 58, claim 59, claim 60, claim 61, claim 62, claim 63, claim 64, claim 65 and claim 66 represents patentable subject matter under 35 U.S.C. 101?

Issue 9 - Whether the invention described in claims claim 67, claim 68, claim 69, claim 70, claim 71, claim 72, claim 73, claim 74, claim 75, claim 76, claim 77, claim 78 and claim 79 represents patentable subject matter under 35 U.S.C. 101?

Issue 10 - Whether the invention described in claims 80, claim 81, claim 82, claim 83, and claim 84 represents patentable subject matter under 35 U.S.C. 101?

Issue 11 - Whether the invention described in claim 85 and claim 86 represents patentable subject matter under 35 U.S.C. 101?

Issue 12 - Whether claim 43, claim 44, claim 45, claim 46, claim 48, claim 49, claim 50, claim 51, claim 52, claim 54, claim 55, claim 56, claim 57, claim 58, claim 59, claim 60, claim 61, claim 62,

claim 63, claim 64, claim 65 and claim 66, claim 67, claim 68, claim 69, claim 70, claim 71, claim 72, claim 73, claim 74, claim 75, claim 76, claim 77, claim 78, claim 79, claim 80, claim 81, claim 82, claim 83, claim 84, claim 85 and/or claim 86 are enabled under 35 U.S.C. 112, first paragraph?

Issue 13 - Whether claim 43, claim 44, claim 45, claim 46, claim 48, claim 49, claim 50, claim 51, claim 52, claim 54, claim 55, claim 56, claim 57, claim 58, claim 59, claim 60, claim 61, claim 62, claim 63, claim 64, claim 65 and claim 66, claim 67, claim 68, claim 69, claim 70, claim 71, claim 72, claim 73, claim 74, claim 75, claim 76, claim 77, claim 78 and/or claim 79 are indefinite under 35 U.S.C. 112, second paragraph?

Issue 14 - Whether claim 80, claim 81, claim 82, claim 83 and/or claim 84 are indefinite under 35 U.S.C. 112, second paragraph?

Issue 15 – Whether claim 85 and/or claim 86 are indefinite under 35 U.S.C. 112, second paragraph?

7. The Argument

Grouping of Claims

For each ground of rejection which Appellant contests herein that applies to more than one claim, such additional claims, to the extent separately identified and argued below, do not stand and fall together.

Issue 1 - Whether claim 43, claim 44, claim 45, claim 46, claim 48, claim 49, claim 50 and claim 52 are patentable under 35 U.S.C. 103(a) over Sandretto (U.S. Patent 5,812,988)?

The claims are patentable because the claim rejections are based on a number of errors in the facts and in the law. Because of these errors, the cited document (Sandretto) and the arguments related to the cited document fail to establish a *prima facie* case of obviousness for every rejected claim as detailed below.

Errors 1 through 11 –It is well established that: “*in determining the difference between the prior art and the claims, the question under 35 U.S.C. 103 is not whether the differences themselves would have been obvious but whether the claimed invention as a whole would have been obvious.*” Furthermore, it is also well established that: *A prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention.* *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984). Errors in the claim rejections caused by the apparent failure to acknowledge the fact that the cited reference teaches away from the invention described in claim

43, claim 44, claim 45, claim 46, claim 48, claim 49, claim 50 and claim 52 include:

Error #1) A failure to acknowledge the fact that Sandretto teaches away from the claimed use of network models to develop forecasts. Sandretto teaches away from every aspect of the claimed invention. Claim 43 teaches the transformation of organization related data into network models that connect one or more elements of value of said firm to one or more aspects of financial performance of said firm. These models have utility in organization analysis, forecasting and management. Sandretto teaches away by teaching an invention that is designed to utilize a wide range of forecasting methods (see Sandretto, Column 3, Line 21 through Line 25). By exclusively teaching methods that teach away from the claimed invention, Sandretto provides additional evidence of the novelty, non-obviousness and newness of claim 43, claim 44, claim 45, claim 46, claim 48, claim 49, claim 50 and claim 52.

Error #2) Failure to acknowledge that Sandretto teaches away from the claimed role of elements of value. Sandretto teaches away from every aspect of the claimed invention. The claimed invention teaches that element of value performance drives the components of value (revenue, expense and capital change). Element of value performance is modeled by creating a summary from the value drivers for each element of value. Sandretto teaches away by teaching that external factors (i.e. industrial production levels and economic conditions) determine revenue, expense and cash flow by item (see Sandretto, Column 37, line 32 – Column 38, line 51).

Aspect	Sandretto teaches	09/761,670 teaches
Revenue	Driven by external factors	Driven by element of value performance
Expense	Driven by external factors	Driven by element of value performance
Capital Change	No relevant teaching	Driven by element of value performance
Cash Flow	Driven by external factors	Driven by element of value performance

By exclusively teaching methods that teach away from the claimed invention, Sandretto provides additional evidence of the novelty, non-obviousness and newness of claim 43, claim 44, claim 45, claim 46, claim 48, claim 49, claim 50 and claim 52.

Error #3) A failure to acknowledge the fact that Sandretto teaches away from the claimed development of models. Sandretto teaches away from every aspect of the claimed invention. Claim 43 describes the transformation of data representative of a business operation and its elements of value into network models that have utility in business analysis, business forecasting and performance management. Sandretto teaches away by teaching the use of predetermined models and reliance on a process that only has the

ability to iterate data that has been provided by a user (see Sandretto, Column 3, Line 21 through Line 37). By exclusively teaching methods that teach away from the claimed invention, Sandretto provides additional evidence of the novelty, non-obviousness and newness of claim 43, claim 44, claim 45, claim 46, claim 48, claim 49, claim 50 and claim 52.

Error #4) A failure to acknowledge the fact that Sandretto teaches away from the claimed modeling method. Sandretto teaches away from every aspect of the claimed invention. Claims 43 describes the transformation of data representative of a business operation and its elements of value into models using a process that does not adjust any input variable values. Sandretto teaches away by teaching a method that relies exclusively on the adjustment of input variable values (the discount rate) in order to back-fit the value of a plurality of items (aka assets) to a known portfolio value. By exclusively teaching methods that teach away from the claimed invention, Sandretto provides additional evidence of the novelty, non-obviousness and newness of claim 43, claim 44, claim 45, claim 46, claim 48, claim 49, claim 50 and claim 52.

Error #5) Failure to acknowledge that Sandretto teaches away from the claimed analysis. Sandretto teaches away from every aspect of the claimed invention. Claim 43 describes the development and use of a statistical model of element of value impact on the components of enterprise value. Sandretto teaches away by teaching a method that purports to determine the actual value of each item (aka asset) instead of identifying a statistical model of element of value impact (see Sandretto, Column 8, Lines 52 - 53). By exclusively teaching methods that teach away from the claimed invention, Sandretto provides additional evidence of the novelty, non-obviousness and newness of claim 43, claim 44, claim 45, claim 46, claim 48, claim 49, claim 50 and claim 52.

Error #6) A failure to acknowledge that Sandretto teaches away from the claimed market efficiency assumptions. Sandretto teaches away from every aspect of the claimed invention. Claim 43 describes a model development method that does not rely on any assumptions about market efficiency. Sandretto teaches away by teaching an analysis method that relies on the efficient market hypothesis (see Sandretto, Column 9, Line 54 through Line 60). By exclusively teaching methods that teach away from the claimed invention, Sandretto provides additional evidence of the novelty, non-obviousness and newness of claim 43, claim 44, claim 45, claim 46, claim 48, claim 49, claim 50 and claim 52.

Error #7) A failure to acknowledge the fact that Sandretto teaches away from the claimed enterprise value model. Sandretto teaches away from every aspect of the claimed invention. The claimed invention teaches and relies on the fact that there are at least three ways to increase the value of a business: increase the value of current operation cash flow, increase the value of market sentiment and increase the value of the enterprise real options. Sandretto teaches away by teaching that there is only one category of enterprise value, cash flow (see table below).

Enterprise value model per 10/750,792	Enterprise value model per Sandretto
Enterprise value = value of current operation cash flow + value of market sentiment + value of real options	Value of cash flow

By exclusively teaching methods that teach away from the claimed invention, Sandretto provides additional evidence of the novelty, non-obviousness and newness of claim 43, claim 44, claim 45, claim 46, claim 48, claim 49, claim 50 and claim 52.

Error #8) A failure to acknowledge that Sandretto teaches away from the claimed level of analysis. Sandretto teaches away from every aspect of the claimed invention. Claims 43 describes the use of a plurality of network models for completing an element of value level analysis of firm performance. Elements of value are comprised of a plurality of items that are grouped together for modeling, analysis and management. Sandretto teaches away by teaching the item (i.e. asset) level analysis of the value of a portfolio or firm (see Sandretto, C10, L 1 through L15). Jost and Barr also teach item level analysis. By exclusively teaching methods that teach away from the claimed invention, Sandretto provides additional evidence of the novelty, non-obviousness and newness of claim 43, claim 44, claim 45, claim 46, claim 48, claim 49, claim 50 and claim 52.

Error #9) A failure to acknowledge that Sandretto teaches away from the claimed approach to element of value modeling. Sandretto teaches away from every aspect of the claimed invention. Claim 43 describes the use of a plurality of network models to model the impact of one or more elements of value on one or more aspects of financial performance for a firm. Implicit in this approach is the assumption that there may be interaction between elements of value that has an impact on financial performance. Sandretto teaches away by teaching and relying on the fact that there is no interaction between the different assets. By exclusively teaching methods that teach away from the claimed invention, Sandretto provides additional evidence of the novelty, non-obviousness and newness of claim 43,

claim 44, claim 45, claim 46, claim 48, claim 49, claim 50 and claim 52.

Error #10) A failure to acknowledge that Sandretto teaches away from the claimed method using weights from the best fit models. Sandretto teaches away from every aspect of the claimed invention. Claims 46 describes the use of weights from the best fit models to calculate the relative contribution of each element of value to the components of value. Sandretto teaches away by teaching the use of predetermined models to actual calculate cash flow, revenue and/or expense based on economic conditions. Value is then determined by iterating asset betas in order to identify a discount rate. By exclusively teaching methods that teach away from the claimed invention, Sandretto provides additional evidence of the novelty, non-obviousness and newness of claim 46.

Error #11) A failure to acknowledge that Sandretto teaches away from the claimed method for discounting cash flow. Sandretto teaches away from every aspect of the claimed invention. Claims 49 describes the calculation of value for a plurality of elements of value using a single discount rate (i.e. the cost of capital) for each and every element of value. Sandretto teaches away by teaching the adjustment of the estimated risk and the associated discount rate for each item (aka asset) as required to back-fit to a known portfolio value (see Sandretto, Column 9, L 20 through L 25). By exclusively teaching methods that teach away from the claimed invention, Sandretto provides additional evidence of the novelty, non-obviousness and newness of claim 49.

Errors 12 through 32 – It is well established that “*when determining whether a claim is obvious, an examiner must make ‘a searching comparison of the claimed invention – including all its limitations – with the teaching of the prior art.’* *In re Ochiai*, 71 F.3d 1565, 1572 (Fed. Cir. 1995). Thus, ‘obviousness requires a suggestion of all limitations in a claim.’ CFMT, Inc. v. Yieldup Intern. Corp., 349 F.3d 1333, 1342 (Fed. Cir. 2003) (citing *In re Royka*, 490 F.2d 981, 985 (CCPA 1974)) Furthermore, the Board of Patent Appeal and Interferences recently confirmed (*In re Wada and Murphy*, Appeal No. 2007- 3733) that a proper, post KSR obviousness determination still requires that an examiner must make “a searching comparison of the claimed invention – including all its limitations – with the teaching of the prior art.” *In re Ochiai*, 71 F.3d 1565, 1572 (Fed. Cir. 1995) (emphasis added). In other words, obviousness still requires a suggestion of all the limitations in a claim. Errors in the claim rejections caused by the apparent failure to acknowledge the fact that the cited documents do not teach one or more limitations of the claimed invention include:

Errors #12, #13, #14, #15, #16, #17 and #18) Failure to acknowledge the fact that the cited documents do not teach or suggest one or more limitation of claim 43 (affects claims 44, 45, 46, 47, 48, 49 and 50), including:

- a) *evolving a plurality of network models for connecting one or more elements of value of a firm to one or more aspects of financial performance of said firm (#12),*
- b) *network models comprised of input nodes, hidden nodes and output nodes (#13),*
- c) *network models where each input node represents an element of value (#14),*
- d) *network models where each output node represents an aspect of financial performance (#15);*
- e) *a plurality of relationships between said nodes, each said relationship being characterized by a degree of influence from one node to another; said degree of influence being dependent upon an impact of the element of value represented by said node (#16),*
- f) *a plurality of relationships between said nodes, each said relationship being characterized by a degree of influence from one node to another; said degree of influence being dependent upon its interrelationship with other elements of value (#17), and/or*
- g) *where each network model from a plurality of network models supports the development of a controlling forecast for use in optimizing purchasing (#18).*

Error #19, #20, #21 and #22) Failure to acknowledge the fact that the cited document do not teach or suggest one or more limitation of claim 44, including:

- a) *a network model with element of value inputs and an output representing firm revenue (#19),*
- b) *a network model with element of value inputs and an output representing firm expense (#20),*
- c) *a network model with element of value inputs and an output representing firm capital change (#21), and/or*
- d) *a network model with element of value inputs and an output representing firm market value (#22).*

Error #23, #24 and #25) Failure to acknowledge the fact that the cited document do not teach or suggest one or more limitation of claim 45, including:

- 1) *a summary of value drivers by element of value (#23);*
- 2) *a summary of value drivers by element of value applied to each input node (#24), and/or*

3) value driver summaries for a plurality of elements of value that summarize the impact of each of said elements of value on one or more aspects of financial performance (#25).

Error #26) Failure to acknowledge the fact that the cited document do not teach or suggest one or more limitation of claim 46, including: *using the weights from the best fit models to identify the relative contribution of each element of value to each component of value net of any impact on the other elements of value.*

Error #27) Failure to acknowledge the fact that the cited document do not teach or suggest one or more limitation of claim 48, including: *a model where a plurality of relationships between nodes are quantified for a specified point in time within a sequential series of points in time.*

Error #28) Failure to acknowledge the fact that the cited document do not teach or suggest one or more limitation of claim 49, including: *combining the relative contribution of each element of value to the components of value with the present value of said components of value to determine the current operation value of each element of value where the components of value are revenue, expense and capital change.*

Error #29, #30 and #31) Failure to acknowledge the fact that the cited document do not teach or suggest one or more limitation of claim 50, including: *a brand element of value (#29), a customer element of value (#30), and an employee element of value (#31).*

Error #32) Failure to acknowledge the fact that the cited document do not teach or suggest one or more limitation of claim 52, including: *network models that comprise business event network models.*

Errors 33 through 36 – It is well established that when “*the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims prima facie obvious. In re Ratti, 270 F.2d 810, 123 USPQ 349 (CCPA 1959)*”. Errors in the claim rejections caused by the apparent failure to acknowledge the fact that changes in the principles of operation of Sandretto will be required to replicate the invention described in claim 43, claim 44, claim 45, claim 46, claim 48, claim 49, claim 50 and claim 52 include:

Error #33) One principle of operation that Sandretto relies on is that external, economic conditions determine enterprise revenue levels, enterprise expense levels and item cash flow (see Sandretto, Column 37, Lines 37 – 58). This principle of operation would have to be changed to replicate the functionality of the claimed invention and recognize the fact that element of value performance determines enterprise revenue levels, enterprise expense levels

and cash flow.

Error #34) A second principle of operation that Sandretto relies on is the calculation of the actual value of each item (see Sandretto, Column 8, Lines 52 - 53). This principle of operation would have to be changed to replicate the functionality of the claimed invention and recognize the fact a network model of the relative contribution of each element of value is developed without calculating the value of each item (aka asset). As noted below, this change would destroy the ability of the Sandretto invention to complete its intended function.

Error #35) A third principle of operation that Sandretto relies on is that: the financial performance of each asset of a portfolio or firm is a known function of a plurality of economic variables (see Sandretto, abstract and Column 9, L 20 through L 25) that are incorporated in pre-defined models that Sandretto relies on. This principle of operation would have to be changed to replicate the functionality of the claimed invention that teaches and relies on the principle that the impact of an element of value on a firm is unknown and must be discovered by modeling. The Appellant notes that this modification requires the Sandretto invention to use an approach (see Table below) that is exactly opposite of the one it relies on and destroy its ability to function.

	Sandretto	09/761,670
Known parameter(s)	Asset financial performance as a function of economic variables	Discount rate
Unknown parameter(s)	Discount rate	Element of value impact

Error #36) Another principle of operation that Sandretto relies on is that discount rates are determined by iteration where said iteration takes place as required to back fit the value of a plurality of items (aka assets) to a known portfolio value (see Sandretto, Column 3, Line 25). This principle of operation would have to be changed to replicate the functionality of the claimed invention which relies on the development and use of discount rates that are analytically determined.

Because the required modifications of the Sandretto invention would change several of its principles of operation, the *prima facie* case of obviousness cannot be properly made.

Error 37 – It is well established that *when a modification of a reference destroys the intent, purpose or function of an invention such a proposed modification is not proper and the prima facie cause of obviousness cannot be properly made (In re Gordon 733 F.2d 900, 221 U.S.P.Q 1125 Fed Circuit 1984)*. Errors in the claim rejections caused by the apparent failure to acknowledge the fact that the changes in the Sandretto invention that are required to duplicate

the functionality described in claim 43, claim 44, claim 45, claim 46, claim 48, claim 49, claim 50 and claim 52 would destroy the intent, purpose and function of the invention include:

Error #37) The function of the Sandretto invention is estimate an asset's risk and NPV (Sandretto, Column 8, Lines 52 - 53) using forecast time series data. To complete this task, Sandretto relies on the use of pre-defined models that determine the cash flow of each individual asset for a given set of economic conditions (see Sandretto, abstract and Column 17, Line 5 through Line 45). The cash flows from these models (similar models are created for revenue and expense based on user assumptions) are combined with iterated asset betas to estimate an asset's risk and NPV.

The Examiner has proposed modifying Sandretto to render obvious an invention that transforms data into network models that quantify the relationship between a plurality of elements of value and the components of value. Modifying Sandretto to replicate the functionality of the claimed invention by changing several of its principles of operation (see error 33, error 34, error 35 and error 36) would destroy its ability to complete its intended function in a number of ways. For example, the network model is only able to identify relative contributions to revenue, expense and cash flow instead of the actual values the Sandretto invention requires for operation.

Because the required modification of the Pant invention would destroy its intended function and purpose, the *prima facie* case of obviousness cannot be properly made.

Error 38 – The Supreme Court in KSR noted that the analysis supporting a rejection under 35 U.S.C. 103 should be made explicit. The Court quoting *In re Kahn* 41 stated that “[R]ejections on obviousness cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness (KSR, 550 U.S. at I, 82 USPQ2d at 1396).” In spite of this well known requirement, the Examiner has not provided the required explanation. In particular, the Examiner has not explained what would motivate someone of average skill in the art to destroy the functionality of the Sandretto invention and modify its principles of operation of as discussed under error 33, error 34, error 35, error 36 and error 37. This explanation is particularly important when one considers that Sandretto teaches away from all claimed methods and/or fails to teach or suggest almost every claim limitation as discussed under error 1, error 2, error 3, error 4, error 5, error 6, error 7, error 8, error 9, error 10, error 11, error 12 error 13, error 14, error 15, error 16, error 17, error 18, error 19, error 20, error 21, error 22, error 23, error 24, error 25, error 26, error 27 error 28, error 29, error 30, error 31 and error 32. In place of an explanation with articulated reasoning

and a rational underpinning the Examiner has reached a conclusion of obviousness on the basis of several dozen errors in the facts and the law. Because no rational underpinning has been provided to support the legal conclusion of obviousness, the prima facie case of obviousness cannot be properly established.

Errors 39, 40 and 41 – The claim rejections are based on 35 U.S.C. §103(a) which states: *A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title [35 USC 102], if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.* Errors in the claim rejections caused by the apparent failure to meet any of the statutory requirements for claim rejection include:

Error #39) Failure to acknowledge the fact that the cited documents fail to teach or suggest the subject matter as whole. As illustrated by the preceding discussion, the obviousness rejections appear to be based of a non-existent standard for obviousness “mentions the same word pairs as another document” instead of “teaches or suggests the subject matter as a whole” as there are no aspect of the rejected claims that are taught or suggested by the cited documents. It is also well established that the “*Patent and Trademark Office (PTO) must consider all claim limitations when determining patentability of an invention over the prior art.*” *In re Lowry*, 32 F.3d 1579, 1582 (Fed. Cir. 1994). As detailed under errors 1 through 33, it does not appear that any of the limitations were actually considered.

Error #40) Failure to acknowledge the fact that the claim rejections have been authored by an individual(s) who appears to lack the level of skill in the art required to author such rejections. It is well established that the “*hypothetical ‘person having ordinary skill in the art’ to which the claimed subject matter pertains would, of necessity have the capability of understanding the scientific and engineering principles applicable to the pertinent art*” *Ex parte Hiyamizu*, 10 USPQ2d 1393, 1394 (Bd. Pat. App. & Inter. 1988). It is unlikely that anyone who understood the scientific and engineering principles applicable to the pertinent art would ever suggest Sandretto as a reference in support of an obviousness rejection for the claimed inventions for the reasons described previously under errors 1 through 39.

Error #41) Failure to acknowledge the fact that the claim rejections are based on apparent misrepresentations regarding the teachings of the cited documents. These apparent

misrepresentation may be a product of the fact that the Examiner does not appear to have the requisite level of skill in the relevant arts.

Errors 42 and 43 – In *Dickinson v. Zurko*, 119 S. Ct. 1816, 50 USPQ2d 1930 (1999), the Supreme Court held that the appropriate standard of review of U.S.P.T.O. findings are the standards set forth in the Administrative Procedure Act (“APA”) at 5 U.S.C. 706 (1994). The APA provides two standards for review – an arbitrary and capricious standard and a substantial evidence standard. Errors in the claim rejections caused by the apparent failure to meet any of the requirements of the APA include:

Error #42) Failure to acknowledge the fact that the claim rejections fail under the substantial evidence standard. Error 1, error 2, error 3, error 4, error 5, error 6, error 7, error 8, error 9, error 10, error 11, error 12, error 13, error 14, error 15, error 16, error 17, error 18, error 19, error 20, error 21, error 22, error 23, error 24, error 25, error 26, error 27, error 28, error 29, error 30, error 31, error 32, error 33, error 34, error 35, error 36, error 37, error 38, error 39, error 40 and error 41 clearly show that the relevant Office Action fails to provide even a scintilla of evidence to support the obviousness rejections of all rejected claims and that as a result the rejections fail to meet the substantial evidence standard.

Error #43) Failure to acknowledge the fact that the claim rejections fail under the arbitrary and capricious standard. The Appellant respectfully submits that the obviousness rejection of claim 43, claim 44, claim 45, claim 46, claim 48, claim 49, claim 50 and claim 52 also fails to pass the arbitrary and capricious test for a number of reasons including the fact that:

- a) as detailed above, the references cited by the Examiner provide substantial evidence of novelty, non-obviousness and newness of the rejected claims (see errors 1 through 37);
- b) no rational underpinning has been provided to support the legal conclusion of obviousness (see error 38);
- c) there is no rational connection between the statutory requirements for an obviousness rejection, the agency fact findings and the rejection of the claims (see errors 39 through 41), and
- d) prior agency fact-findings have shown that 35 U.S.C. 103 requirements for non-obviousness are apparently not always considered during the prosecution and allowance of large company patent applications (i.e. U.S. Patent 6,249,768). This apparently unequal application of the law comprises an apparent violation of 35 USC 3.

Because the claim rejections do not meet either standard of the APA, the *prima facie* case of

obviousness cannot be properly established.

Summarizing the above, the Appellant respectfully submits that the Examiner has failed to produce the evidence required to satisfy the requirements of the APA and/or establish a prima facie case of obviousness for a single claim. These failures provide additional evidence that the claimed inventions are new, novel and non-obvious.

Issue 2 – Whether claim 54, claim 55, claim 56, claim 57, claim 58, claim 59, claim 60, claim 61, claim 62, claim 64, claim 65 and claim 66 are patentable under 35 U.S.C. 103(a) over Sandretto?

The claims are patentable because the claim rejections are based on a number of errors in the facts and in the law. Because of these errors, the cited document (Sandretto) and the arguments related to the cited document fail to establish a prima facie case of obviousness for every rejected claim as detailed below.

Errors 1 through 12 – Errors in the claim rejections caused by the apparent failure to acknowledge the fact that the cited references teach away from the invention described in claim 54, claim 55, claim 56, claim 57, claim 58, claim 59, claim 60, claim 61, claim 62, claim 64, claim 65 and claim 66 include, error 1, error 2, error 3, error 4, error 5, error 6, error 7, error 8, error 9, error 10 and error 11 identified under Issue 1. Additional errors include:

Error #12) Failure to acknowledge that Sandretto teaches away from the claimed method of data management. Sandretto teaches away from every aspect of the claimed invention. Claim 54 teaches that data are aggregated from a plurality of systems. Sandretto teaches away by teaching that only 3 variables are required and that the user can provide the required data input (see Sandretto, Column 3, Line 21 through Line 25). Furthermore, values for the three variables are not generally found in the claimed systems. By exclusively teaching methods that teach away from the claimed invention, Sandretto provides additional evidence of the novelty, non-obviousness and newness of claim 54, claim 55, claim 56, claim 57, claim 58, claim 59, claim 60, claim 61, claim 62, claim 64, claim 65 and claim 66.

Errors 13 through 34 - Errors in the claim rejections caused by the apparent failure to acknowledge the fact that the cited document (Sandretto) does not teach one or more limitations of the claimed invention include error 13, error 14, error 15, error 16, error 17, error 18, error 19, error 20, error 21, error 22, error 23, error 24, error 25, error 26, error 27, error 28, error 29, error 30, error 31 and error 32 identified under Issue 1.

Errors #33 and #34) Failure to acknowledge the fact that the cited documents do not teach or suggest one or more limitation of claim 54 (affects claims 55, 56, 57, 58, 59, 60, 61, 62, 64, 65 and 66), including:

- a) *aggregating firm related data from a plurality of systems in accordance with a common data dictionary (#32), and*
- b) *using at least a portion of the data to generate a plurality of network models which connect one or more current elements of value of said firm to one or more aspects of financial performance of said firm (#33)*

Errors 35, 36, 37 and 38 – Errors in the claim rejections caused by the apparent failure to acknowledge the fact that changes in the principles of operation of Sandretto will be required to replicate the invention described in claim 54, claim 55, claim 56, claim 57, claim 58, claim 59, claim 60, claim 61, claim 62, claim 64, claim 65 and claim 66 include error 33, error 34, error 35 and error 36 identified under Issue 1.

Error 39 – Errors in the claim rejections caused by the apparent failure to acknowledge the fact that the changes in the Sandretto invention required to replicate the functionality of the invention described in claim 54, claim 55, claim 56, claim 57, claim 58, claim 59, claim 60, claim 61, claim 62, claim 64, claim 65 and claim 66 will destroy the functionality of the Sandretto invention include error 37 identified under Issue 1.

Error 40 – *The Supreme Court in KSR noted that the analysis supporting a rejection under 35 U.S.C. 103 should be made explicit. The Court quoting In re Kahn 41 stated that “[R]ejections on obviousness cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness (KSR, 550 U.S. at I, 82 USPQ2d at 1396).”* In spite of this well known requirement, the Examiner has not provided the required explanation. In particular, the Examiner has not explained what would motivate someone of average skill in the art to destroy the functionality of the Sandretto invention and modify its principles of operation as discussed under error 35, error 36, error 37, error 38 and error 39. This explanation is particularly important when one considers that Sandretto teaches away from all claimed methods and/or fails to teach or suggest almost every claim limitation as discussed under error 1, error 2, error 3, error 4, error 5, error 6, error 7, error 8, error 9, error 10, error 11, error 12 error 13, error 14, error 15, error 16, error 17, error 18, error 19, error 20, error 21, error 22, error 23, error 24, error 25, error 26, error 27, error 28, error 29, error 30 error 31, error 32, error 33 and error 34. In place of an explanation with articulated reasoning and a rational underpinning the Examiner has reached a conclusion of obviousness on

the basis of several dozen errors in the facts and the law. Because no rational underpinning has been provided to support the legal conclusion of obviousness, the prima facie case of obviousness cannot be properly established.

Errors 41, 42 and 43 – Errors in the claim rejections caused by the apparent failure to meet any of the statutory requirements for claim rejection include error 39, error 40 and error 41 identified under Issue 1:

Errors 44 and 45 – Errors in the claim rejections caused by the apparent failure to meet any of the requirements of the APA include error 42 and error 43 identified under Issue 1.

Because the claim rejections do not meet either standard of the APA, the prima facie case of obviousness cannot be properly established.

Summarizing the above, the Appellant respectfully submits that the Examiner has failed to produce the evidence required to satisfy the requirements of the APA and/or establish a prima facie case of obviousness for a single claim. These failures provide additional evidence that the claimed inventions are new, novel and non-obvious.

Issue 3 – Whether claim 67, claim 68, claim 69, claim 70, claim 71, claim 72, claim 73, claim 74, claim 75, claim 77, claim 78 and claim 79 are patentable under 35 U.S.C. 103(a) over Sandretto?

The claims are patentable because the claim rejections are based on a number of errors in the facts and in the law. Because of these errors, the cited document (Sandretto) and the arguments related to the cited document fail to establish a prima facie case of obviousness for every rejected claim as detailed below.

Errors 1 through 12 – Errors in the claim rejections caused by the apparent failure to acknowledge the fact that the cited references teach away from the invention described in claim 67, claim 68, claim 69, claim 70, claim 71, claim 72, claim 73, claim 74, claim 75, claim 77, claim 78 and claim 79 include, error 1, error 2, error 3, error 4, error 5, error 6, error 7, error 8, error 9, error 10 and error 11 identified under Issue 1. Additional errors include:

Error #12) Failure to acknowledge that Sandretto teaches away from the claimed method of data management. Sandretto teaches away from every aspect of the claimed invention. Claim 67 teaches that data are integrated from a plurality of systems. Sandretto teaches away by teaching that only 3 variables are required and that the user can provide the required data input (see Sandretto, Column 3, Line 21 through Line 25). Furthermore, values for the three variables are not generally found in the claimed systems. By

exclusively teaching methods that teach away from the claimed invention, Sandretto provides additional evidence of the novelty, non-obviousness and newness of claim 67, claim 68, claim 69, claim 70, claim 71, claim 72, claim 73, claim 74, claim 75, claim 77, claim 78 and claim 79.

Errors 13 through 34 - Errors in the claim rejections caused by the apparent failure to acknowledge the fact that the cited document (Sandretto) does not teach one or more limitations of the claimed invention include error 13, error 14, error 15, error 16, error 17, error 18, error 19, error 20, error 21, error 22, error 23, error 24, error 25, error 26, error 27, error 28, error 29, error 30, error 31 and error 32 identified under Issue 1.

Errors #33 and #34) Failure to acknowledge the fact that the cited documents do not teach or suggest one or more limitation of claim 67 (affects claims 68, 69, 70, 71, 72, 73, 74, 75, 77, 78 and 79), including:

- a) *integrating business related data for a firm using a common dictionary (#32), and*
- b) *using at least a portion of the data to generate a plurality of network models which connect one or more current elements of value of said firm to one or more aspects of financial performance of said firm (#33)*

Errors 35, 36, 37 and 38 – Errors in the claim rejections caused by the apparent failure to acknowledge the fact that changes in the principles of operation of Sandretto will be required to replicate the invention described in claim 67, claim 68, claim 69, claim 70, claim 71, claim 72, claim 73, claim 74, claim 75, claim 77, claim 78 and claim 79 include error 33, error 34, error 35 and error 36 identified under Issue 1.

Error 39 – Errors in the claim rejections caused by the apparent failure to acknowledge the fact that the changes in the Sandretto invention required to replicate the functionality of the invention described in claim 67, claim 68, claim 69, claim 70, claim 71, claim 72, claim 73, claim 74, claim 75, claim 77, claim 78 and claim 79 will destroy the functionality of the Sandretto invention include error 37 identified under Issue 1.

Error 40 – *The Supreme Court in KSR noted that the analysis supporting a rejection under 35 U.S.C. 103 should be made explicit. The Court quoting In re Kahn 41 stated that “[R]ejections on obviousness cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness (KSR, 550 U.S. at I, 82 USPQ2d at 1396).”* In spite of this well known requirement, the Examiner has not provided the required explanation. In particular, the Examiner has not

explained what would motivate someone of average skill in the art to destroy the functionality of the Sandretto invention and modify its principles of operation as discussed under error 34, error 35, error 36, error 37 and error 38. This explanation is particularly important when one considers that Sandretto teaches away from all claimed methods and/or fails to teach or suggest almost every claim limitation as discussed under error 1, error 2, error 3, error 4, error 5, error 6, error 7, error 8, error 9, error 10, error 11, error 12 error 13, error 14, error 15, error 16, error 17, error 18, error 19, error 20, error 21, error 22, error 23, error 24, error 25, error 26, error 27, error 28, error 29, error 30 error 31, error 32 and error 33. In place of an explanation with articulated reasoning and a rational underpinning the Examiner has reached a conclusion of obviousness on the basis of several dozen errors in the facts and the law. Because no rational underpinning has been provided to support the legal conclusion of obviousness, the prima facie case of obviousness cannot be properly established.

Errors 41, 42 and 43 – Errors in the claim rejections caused by the apparent failure to meet any of the statutory requirements for claim rejection include error 39, error 40 and error 41 identified under Issue 1:

Errors 44 and 45 – Errors in the claim rejections caused by the apparent failure to meet any of the requirements of the APA include error 42 and error 43 identified under Issue 1.

Because the claim rejections do not meet either standard of the APA, the prima facie case of obviousness cannot be properly established.

Summarizing the above, the Appellant respectfully submits that the Examiner has failed to produce the evidence required to satisfy the requirements of the APA and/or establish a prima facie case of obviousness for a single claim. These failures provide additional evidence that the claimed inventions are new, novel and non-obvious.

Issue 4 - Whether claim 80, claim 81, claim 82, claim 83, claim 84 and claim 85 are patentable under 35 U.S.C. 103(a) over Sandretto (U.S. Patent 5,812,988)?

The claims are patentable because the claim rejections are based on a number of errors in the facts and in the law. Because of these errors, the cited document (Sandretto) and the arguments related to the cited document fail to establish a prima facie case of obviousness for every rejected claim as detailed below.

Errors 1 through 12 – Errors in the claim rejections caused by the apparent failure to acknowledge the fact that the cited references teach away from the invention described in claim 80, claim 81, claim 82, claim 83, claim 84 and claim 85 include, error 1, error 2, error 3, error 4,

error 5, error 6, error 7, error 8, error 9, error 10 and error 11 identified under Issue 1. Additional errors include:

Error #12) Failure to acknowledge that Sandretto teaches away from the claimed method of data management. Sandretto teaches away from every aspect of the claimed invention. Claim 80 teaches that data are integrated from a plurality of systems in an application database. Sandretto teaches away by teaching that only 3 variables are required and that the user can provide the required data input (see Sandretto, Column 3, Line 21 through Line 25). Furthermore, values for the three variables are not generally found in the claimed systems. By exclusively teaching methods that teach away from the claimed invention, Sandretto provides additional evidence of the novelty, non-obviousness and newness of claim 80, claim 81, claim 82, claim 83, claim 84 and claim 85.

Errors 13 through 25 - Errors in the claim rejections caused by the apparent failure to acknowledge the fact that the cited document (Sandretto) does not teach one or more limitations of the claimed invention include:

Errors #13, #14, #15 and #16) Failure to acknowledge the fact that the cited documents do not teach or suggest one or more limitation of claim 80 (affects claims 81, 82, 83 and 84), including:

- a) *accessing a plurality of data representative of enterprise via an interface coupled to a plurality of data sources (#13),*
- b) *converting said data to a common schema using an application software segment (#14),*
- c) *storing said converted data in a database for use in processing (#15),*
- d) *a plurality of sources further comprise database management systems for systems selected from the group consisting of a basic financial system, a human resource system, an advanced financial system, a sales system, an operations system, an accounts receivable system, an accounts payable system, a capital asset system, an inventory system, an invoicing system, a payroll system, a purchasing system and combinations thereof (#16).*

Error #17) Failure to acknowledge the fact that the cited document do not teach or suggest one or more limitation of claim 81, including: *wherein a plurality of sources further comprise a plurality of relational databases where said databases use different data formats (#17).*

Errors #18 and #19) Failure to acknowledge the fact that the cited document do not teach or suggest one or more limitation of claim 83, including:

- a) wherein a common schema further comprises a network schema (#18); and
- b) wherein a common schema contains a common data dictionary where said common data dictionary defines common attributes selected from the group consisting of elements of value, components of value, currencies, units of measure, time periods, dates and combinations thereof (#19).

Error #20) Failure to acknowledge the fact that the cited document do not teach or suggest one or more limitation of claim 84, including: *wherein the method further comprises completing a conversion and storage of data before processing begins.*

Errors #21, #22, #23, #24, #25 and #26) Failure to acknowledge the fact that the cited documents do not teach or suggest one or more limitation of claim 85, including:

- a) identifying a set of data required for analyzing a commercial enterprise (#21), and
- b) preparing the identified set of data for use in analysis (#22), and
- c) analyzing at least a portion of said data in an automated fashion as required to identify one or more statistics selected from the group consisting of pattern, trend, ratio, average, elapsed time period, percentage, variance, monthly total and combinations thereof (#23),
- d) using at least a portion of said statistics and data to develop a model of enterprise current operation financial performance using automated learning (#24), and
- e) where the model mathematically expresses the dynamic characteristics and behavior of each element of value as including direct effects and indirect effects from each element of value (#25).

Errors 26, 27, 28 and 29 – Errors in the claim rejections caused by the apparent failure to acknowledge the fact that changes in the principles of operation of Sandretto will be required to replicate the invention described in claim 80, claim 81, claim 82, claim 83, claim 84 and claim 85 include error 33, error 34, error 35 and error 36 identified under Issue 1.

Error 30 – Errors in the claim rejections caused by the apparent failure to acknowledge the fact that the changes in the Sandretto invention required to replicate the functionality of the invention described in claim 80, claim 81, claim 82, claim 83, claim 84 and claim 85 will destroy the functionality of the Sandretto invention include error 37 identified under Issue 1.

Error 31 – *The Supreme Court in KSR noted that the analysis supporting a rejection under 35 U.S.C. 103 should be made explicit. The Court quoting In re Kahn 41 stated that “[R]ejections on obviousness cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of*

obviousness (*KSR, 550 U.S. at I, 82 USPQ2d at 1396*).” In spite of this well known requirement, the Examiner has not provided the required explanation. In particular, the Examiner has not explained what would motivate someone of average skill in the art to destroy the functionality of the Sandretto invention and modify its principles of operation as discussed under error 26, error 27, error 28, error 29 and error 30. This explanation is particularly important when one considers that Sandretto teaches away from all claimed methods and/or fails to teach or suggest almost every claim limitation as discussed under error 1, error 2, error 3, error 4, error 5, error 6, error 7, error 8, error 9, error 10, error 11, error 12, error 13, error 14, error 15, error 16, error 17, error 18, error 19, error 20, error 21, error 22, error 23, error 24 and error 25. In place of an explanation with articulated reasoning and a rational underpinning the Examiner has reached a conclusion of obviousness on the basis of several dozen errors in the facts and the law. Because no rational underpinning has been provided to support the legal conclusion of obviousness, the prima facie case of obviousness cannot be properly established.

Errors 32, 33 and 34 – Errors in the claim rejections caused by the apparent failure to meet any of the statutory requirements for claim rejection include error 39, error 40 and error 41 identified under Issue 1:

Errors 35 and 36 – Errors in the claim rejections caused by the apparent failure to meet any of the requirements of the APA include error 42 and error 43 identified under Issue 1.

Because the claim rejections do not meet either standard of the APA, the prima facie case of obviousness cannot be properly established.

Summarizing the above, the Appellant respectfully submits that the Examiner has failed to produce the evidence required to satisfy the requirements of the APA and/or establish a prima facie case of obviousness for a single claim. These failures provide additional evidence that the claimed inventions are new, novel and non-obvious.

Issue 5 - Whether claim 63 and claim 76 are patentable under 35 U.S.C. 103(a) over Sandretto (U.S. Patent 5,812,988) in view of Jost (U.S. Patent 5,361,201)?

The claims are patentable because the claim rejections are based on a number of errors in the facts and in the law. Because of these errors, the cited documents (Sandretto and Jost) and the arguments related to the cited documents fail to establish a prima facie case of obviousness for every rejected claim as detailed below.

Errors 1 through 13 – Errors in the claim rejections caused by the apparent failure to acknowledge the fact that the cited references teach away from the invention described in claim

63 and claim 76 include, error 1, error 2, error 3, error 4, error 5, error 6, error 7, error 8, error 9, error 10 and error 11 identified under Issue 1. Additional errors include:

Error #12) A failure to acknowledge the fact that Jost teaches away from the claimed method of using data that has been transformed into summaries. The claimed model development method relies on data inputs that comprise data representative of a physical objects that have been transformed into summaries. Jost teaches away by teaching a process that directly uses the data received as inputs without completing any type of transformation (see Jost, FIG. 8). By exclusively teaching methods that teach away from the claimed invention, Jost provides additional evidence of the novelty, non-obviousness and newness of claim 63 and claim 76.

Error #13) A failure to acknowledge the fact that Jost teaches away from one of the claimed approaches to value analysis. The claimed model development method teaches and relies on a method that uses the contribution to components of value to determine the value of an element of value. Jost teaches away by teaching that value is a characteristic of a property rather than something that is a function of the cash flow from said property. By exclusively teaching methods that teach away from the claimed invention, Jost provides additional evidence of the novelty, non-obviousness and newness of claim 63 and claim 76.

Errors 14 and 15 - Errors in the claim rejections caused by the apparent failure to acknowledge the fact that the cited documents (Sandretto and Jost) do not teach one or more limitations of the claimed invention include:

Error #14) Failure to acknowledge the fact that the cited documents do not teach or suggest one or more limitation of claim 63, including: *network models which connect one or more current elements of value of said firm to one or more aspects of financial performance of said firm that further comprise neural network models.*

Error #15) Failure to acknowledge the fact that the cited documents do not teach or suggest one or more limitation of claim 76, including: *network models which connect one or more current elements of value of said firm to one or more aspects of financial performance of said firm that further comprise neural network models.*

Errors 16, 17, 18 and 19 – Errors in the claim rejections caused by the apparent failure to acknowledge the fact that changes in the principles of operation of Sandretto will be required to replicate the invention described in claim 63 and claim 76 include error 33, error 34, error 35 and error 36 identified under Issue 1.

Errors 20 and 21 – Errors in the claim rejections caused by the apparent failure to acknowledge the fact that changes in the principles of operation of Jost will be required to replicate the invention described in claim 63 and claim 76, include:

Error #20) One principle of operation that Jost relies on is the development and use of predictive models for a specific time period. This principle of operation would have to be changed to use of time series models in order to replicate the functionality of the claimed invention.

Error #21) A second, closely related principle of operation that Jost relies on is the analysis of input variables (see Jost, FIG. 8). This principle of operation would have to be changed to replicate the functionality of the claimed invention that analyzes summaries of input variables.

Because the required modifications of the Jost invention would change several of its principles of operation, the *prima facie* case of obviousness cannot be properly made.

Error 22 – Errors in the claim rejections caused by the apparent failure to acknowledge the fact that the changes in the Sandretto invention required to replicate the functionality of the invention described in claim 63 and claim 76 will destroy the functionality of the Sandretto invention include error 37 identified under Issue 1.

Error 23 – *The Supreme Court in KSR noted that the analysis supporting a rejection under 35 U.S.C. 103 should be made explicit. The Court quoting In re Kahn 41 stated that “[R]ejections on obviousness cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness (KSR, 550 U.S. at I, 82 USPQ2d at 1396).”* In spite of this well known requirement, the Examiner has not provided the required explanation. In particular, the Examiner has not explained what would motivate someone of average skill in the art to destroy the functionality of the Sandretto invention and modify the principles of operation of both Sandretto and Jost as discussed under error 16, error 17, error 18, error 19, error 20, error 21 and error 22. This explanation is particularly important when one considers that Sandretto and Jost teach away from all claimed methods and/or fails to teach or suggest almost every claim limitation as discussed under error 1, error 2, error 3, error 4, error 5, error 6, error 7, error 8, error 9, error 10, error 11, error 12 error 13, error 14 and error 15. In place of an explanation with articulated reasoning and a rational underpinning the Examiner has reached a conclusion of obviousness on the basis of several dozen errors in the facts and the law. Because no rational underpinning has been provided to support the legal conclusion of obviousness, the *prima facie* case of obviousness cannot be properly established.

Errors 24, 25 and 26 – Errors in the claim rejections caused by the apparent failure to meet any of the statutory requirements for claim rejection include error 39, error 40 and error 41 identified under Issue 1:

Errors 27 and 28 – Errors in the claim rejections caused by the apparent failure to meet any of the requirements of the APA include error 42 and error 43 identified under Issue 1.

Because the claim rejections do not meet either standard of the APA, the prima facie case of obviousness cannot be properly established.

Summarizing the above, the Appellant respectfully submits that the Examiner has failed to produce the evidence required to satisfy the requirements of the APA and/or establish a prima facie case of obviousness for a single claim. These failures provide additional evidence that the claimed inventions are new, novel and non-obvious.

Issue 6 - Whether claim 51 and claim 86 are patentable under 35 U.S.C. 103(a) over Sandretto (U.S. Patent 5,812,988) in view of Barr (U.S. Patent 5,761,442)?

The claims are patentable because the claim rejections are based on a number of errors in the facts and in the law. Because of these errors, the cited documents (Sandretto and Barr) and the arguments related to the cited documents fail to establish a prima facie case of obviousness for every rejected claim as detailed below.

Errors 1 through 13 – Errors in the claim rejections caused by the apparent failure to acknowledge the fact that the cited references teach away from the invention described in claim 51 and claim 86 include, error 1, error 2, error 3, error 4, error 5, error 6, error 7, error 8, error 9, error 10 and error 11 identified under Issue 1. Additional errors include:

Error #12) A failure to acknowledge the fact that Barr teaches away from the claimed role of elements of value. Barr teaches away from every aspect of the claimed invention. The claimed invention teaches that element of value performance drives the components of value (revenue, expense and capital change) and business value. Barr teaches away by teaching that business market value is driven by technical factors, current stock price, volume traded per day, etc., market returns and fundamental factors, historical earnings, forecast earnings, etc. (see Barr, FIG. 2) By exclusively teaching methods that teach away from the claimed invention, Barr provides additional evidence of the novelty, non-obviousness and newness of claim 51 and claim 86.

Error #13) A failure to acknowledge that Barr teaches away from the claimed market efficiency assumptions. Barr teaches away from every aspect of the claimed invention.

Claims 51 and 86 describe a model development method that does not rely on any assumptions about market efficiency. Barr teaches away by teaching an analysis method that relies on the capital asset pricing model and the efficient market hypothesis (see Barr, Column 7, Line 2). By exclusively teaching methods that teach away from the claimed invention, Barr provides additional evidence of the novelty, non-obviousness and newness of claim 63 and claim 76.

Errors 14 through 24 - Errors in the claim rejections caused by the apparent failure to acknowledge the fact that the cited documents (Sandretto and Barr) do not teach one or more limitations of the claimed invention include:

Error #14) Failure to acknowledge the fact that the cited documents do not teach or suggest one or more limitation of claim 63, including: *a plurality of network models for connecting one or more elements of value of said firm to one or more aspects of financial performance of said firm where a plurality of network models further comprise a plurality of neural network models that are trained using genetic algorithms.*

Error #15 through #24) Failure to acknowledge the fact that the cited documents do not teach or suggest one or more limitation of claim 86, including:

- a) *identifying a set of data required for analyzing a commercial enterprise (#15),*
- b) *preparing the identified set of data for use in analysis (#16),*
- c) *analyzing at least a portion of said data in an automated fashion as required to identify one or more statistics selected from the group consisting of pattern, trend, ratio, average, elapsed time period, percentage, variance, monthly total and combinations thereof (#17),*
- d) *using at least a portion of said statistics and data to develop a model of enterprise current operation financial performance using automated learning (#18),*
- e) *where the model mathematically expresses the dynamic characteristics and behavior of each element of value as including direct effects and indirect effects from each element of value (#19),*
- f) *the method of claim a through e wherein the method further comprises using a plurality of genetic algorithms to automatically learn from the data by using fitness measure rescaling (#20),*
- g) *the method of claim a through e wherein the method further comprises using a plurality of genetic algorithms to automatically learn from the data by using random mutation (#21),*

- h) the method of claim a through e wherein the method further comprises using a plurality of genetic algorithms to automatically learn from the data by recalibrating target fitness levels (#22),*
- i) the method of claim a through e wherein the method further comprises using a plurality of genetic algorithms to automatically learn from the data by using selective crossover (#23), and*
- j) the method of claim a through e wherein the method further comprises using a plurality of genetic algorithms to automatically learn from the data by using selective carry-forward (#24).*

Errors 25, 26, 27 and 28 – Errors in the claim rejections caused by the apparent failure to acknowledge the fact that changes in the principles of operation of Sandretto will be required to replicate the invention described in claim 51 and claim 86 include error 33, error 34, error 35 and error 36 identified under Issue 1.

Errors 29 and 30 – Errors in the claim rejections caused by the apparent failure to acknowledge the fact that changes in the principles of operation of Barr will be required to replicate the invention described in claim 51 and claim 86, include:

Error #29) One principle of operation that Barr relies on is that technical factors, fundamental factors and market returns drive business value (see Barr, FIG. 2). This principle of operation would have to be changed to recognize that element of value performance drives business value in order to replicate the functionality of the claimed invention.

Error #30) A second, principle of operation that Barr relies on is the analysis of input variables (see Barr, FIG. 3). This principle of operation would have to be changed to replicate the functionality of the claimed invention that analyzes summaries of input variables.

Because the required modifications of the Barr invention would change several of its principles of operation, the *prima facie* case of obviousness cannot be properly made.

Error 31 – Errors in the claim rejections caused by the apparent failure to acknowledge the fact that the changes in the Sandretto invention required to replicate the functionality of the invention described in claim 51 and claim 86 will destroy the functionality of the Sandretto invention include error 37 identified under Issue 1.

Error 32 – *The Supreme Court in KSR noted that the analysis supporting a rejection under 35 U.S.C. 103 should be made explicit. The Court quoting In re Kahn 41 stated that “[R]ejections on*

obviousness cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness (KSR, 550 U.S. at I, 82 USPQ2d at 1396).” In spite of this well known requirement, the Examiner has not provided the required explanation. In particular, the Examiner has not explained what would motivate someone of average skill in the art to destroy the functionality of the Sandretto invention and modify the principles of operation of both Sandretto and Barr as discussed under error 25, error 26, error 27, error 28, error 29, error 30 and error 31. This explanation is particularly important when one considers that Sandretto teaches away from all claimed methods and/or fails to teach or suggest almost every claim limitation as discussed under error 1, error 2, error 3, error 4, error 5, error 6, error 7, error 8, error 9, error 10, error 11, error 12, error 13, error 14 and error 15, error 16, error 17, error 18, error 19, error 20, error 21, error 22, error 23 and error 24. In place of an explanation with articulated reasoning and a rational underpinning the Examiner has reached a conclusion of obviousness on the basis of several dozen errors in the facts and the law. Because no rational underpinning has been provided to support the legal conclusion of obviousness, the prima facie case of obviousness cannot be properly established.

Errors 33, 34 and 35 – Errors in the claim rejections caused by the apparent failure to meet any of the statutory requirements for claim rejection include error 39, error 40 and error 41 identified under Issue 1:

Errors 36 and 37 – Errors in the claim rejections caused by the apparent failure to meet any of the requirements of the APA include error 42 and error 43 identified under Issue 1.

Because the claim rejections do not meet either standard of the APA, the prima facie case of obviousness cannot be properly established.

Summarizing the above, the Appellant respectfully submits that the Examiner has failed to produce the evidence required to satisfy the requirements of the APA and/or establish a prima facie case of obviousness for a single claim. These failures provide additional evidence that the claimed inventions are new, novel and non-obvious.

Issue 7 - Whether the invention described in claim 43, claim 44, claim 45, claim 46, claim 48, claim 49, claim 50, claim 51 and claim 52 represents patentable subject matter under 35 U.S.C. 101?

The claims are patentable because the claim rejections are based on a number of errors in the facts and in the law. Because of these errors, the arguments presented by the Examiner fail to establish a prima facie case of a lack of utility and/or non statutory subject matter for every

rejected claim as detailed below.

Errors 1 and 2 - It is well established that “*an applicant's assertion of utility creates a presumption of utility that will generally be sufficient to satisfy the utility requirement of 35 U.S.C. 101*. See, e.g., *In re Jolles*, 628 F.2d 1322, 206 USPQ 885 (CCPA 1980); *In re Irons*, 340 F.2d 974, 144 USPQ 351 (CCPA 1965); *In re Langer*, 503 F.2d 1380, 183 USPQ 288 (CCPA 1974); *In re Sichert*, 566 F.2d 1154, 1159, 196 USPQ 209, 212-13 (CCPA 1977)”. It is also well established that “*the examiner has the initial burden of challenging an asserted utility. Only after the examiner has provided evidence showing that one of ordinary skill in the art would reasonably doubt the asserted utility does the burden shift to the applicant to provide rebuttal evidence sufficient to convince one of ordinary skill in the art of the invention's asserted utility*. *In re Brana*, 51 F.3d 1560, 1566, 34 USPQ2d 1436, 1441 (Fed. Cir. 1995) (citing *In re Bundy*, 642 F.2d 430, 433, 209 USPQ 48, 51 (CCPA 1981)). Also of note is the fact that the “*Supreme Court noted that one example of a statutory “process” is where the process steps provide a transformation or reduction of an article to a different state or thing* (*Diehr*, 450 U.S. at 183, 209 USPQ at 6). In *Alappat*, the Court held that “*data, transformed by a machine*” “*to produce a smooth waveform display*” “*constituted a practical application of an abstract idea*.” *State Street*, 149 F.3d at 1373. In *Arrhythmia*, the Court held “*the transformation of electrocardiograph signals*” “*by a machine*” “*constituted a practical application of an abstract idea*.” *Id.* Likewise, in *State Street*, the Court held that “*the transformation of data*” “*by a machine*” “*into a final share price, constitutes a practical application of a mathematical algorithm*.” *Id.* Thus, while *Diehr* involved the transformation of a tangible object – curing synthetic rubber – the Court also regards the transformation of intangible subject matter to similarly be eligible, so long as data represent some real world activity. *In re Bilski*, 545 F.3d 943, 88 U.S.P.Q.2d 1385 (2008) generally follows these prior decisions and states that the data transformed by a process must represent an object or substance that physically exists. Errors in the claim rejections caused by the apparent failure to establish a *prima facie* case of a lack of utility include:

Error #1) The rejection of independent claims 43 is based on a conclusory statement that the invention described in the claim lacks utility. The remaining claims are rejected because they depend on the rejected independent claim. In rejecting the claim, the Examiner failed to explain why the transformation of data into a predictive model is not useful. The failure to provide an explanation for the asserted lack of utility supported by evidence leads to the inevitable conclusion that the Examiner has failed to establish a *prima facie* case that would support a §101 rejection of claim 43, claim 44, claim 45, claim 46, claim 48, claim 49, claim 50, claim 51 and claim 52.

Error #2) The application specification asserts that the claimed process produces models that have utility in supporting the optimization of purchasing activities. There is no statutory basis for giving any weight to a conclusory statement that the claimed invention lacks utility and/or ignoring the evidence in the specification that the claimed invention has utility. This is particularly true when the conclusory statement has been authored by an individual with a level of skill in the art that does not appear to be average or better.

The prima facie case of a lack of utility has not been properly established. Recognizing this clear error in the grounds for rejection will reverse the non statutory subject matter rejection of claim 43, claim 44, claim 45, claim 46, claim 48, claim 49, claim 50, claim 51 and claim 52.

Errors 3 and 4 – Additional errors in the rejections for lack of utility are the result of the fact that the claim rejections are based on a conclusory statement that is demonstrably false. Errors in the claim rejections caused by a reliance on an apparently false conclusory statements include:

Error #3) As discussed under Error #1 and Error #2, claim 43, claim 44, claim 45, claim 46, claim 48, claim 49, claim 50, claim 51 and claim 52 are rejected for allegedly not having any utility. This conclusory statement is demonstrably false as the claimed invention transforms data representative of an organization into network models that have utility in analyzing, modeling and managing entities that physically exist (i.e. an organization and its elements of value). As discussed under Error #2, the models also have utility in supporting purchasing activity optimization.

Error #4) Is a failure to acknowledge that the rejected claims meet the statutory requirements for patentability. The rejected independent claims describe processes that transform data representative of an organization and its elements of value that physically exists into a different state or thing: a plurality of network models. As discussed previously, the network models have a number of specific utilities that were identified in the specification.

The claim rejections are improper because they are based on conclusory statements that are incorrect. Recognizing this clear error in the grounds for rejection will reverse the §101 rejection of claim 43, claim 44, claim 45, claim 46, claim 48, claim 49, claim 50, claim 51 and claim 52.

Errors 5 and 6 – In *Dickinson v. Zurko*, 119 S. Ct. 1816, 50 USPQ2d 1930 (1999), the Supreme Court held that the appropriate standard of review of USPTO findings are the standards set forth in the Administrative Procedure Act (“APA”) at 5 U.S.C. 706 (1994). The APA provides two standards for review – an arbitrary and capricious standard and a substantial evidence standard.

Errors in the claim rejections caused by the apparent failure to meet any of the requirements of the APA include:

Error #5) Failure to acknowledge the fact that the claim rejections fail under the substantial evidence standard. Error 1, error 2, error 3 and error 4 clearly show that the relevant Office Action fails to provide even a scintilla of evidence to support the non statutory subject matter rejection of claim 43, claim 44, claim 45, claim 46, claim 48, claim 49, claim 50, claim 51 and claim 52 and that as a result the rejections fail to meet the substantial evidence standard.

Error #6) Failure to acknowledge the fact that the claim rejections fail under the arbitrary and capricious standard. The Appellant respectfully submits that the non statutory subject matter rejection of claim 43, claim 44, claim 45, claim 46, claim 48, claim 49, claim 50, claim 51 and claim 52 also fails to pass the arbitrary and capricious test for a number of reasons including the fact that:

- a) no rational underpinning has been provided to support the assertions regarding a lack of utility (see errors 1 through 4),
- b) there is no rational connection between the rejection for a lack of utility and the prior agency fact findings associated with U.S. Patent 6,249,768.
- c) prior agency fact-findings have shown that 35 U.S.C. 101 requirements for statutory subject matter are apparently not always considered during the prosecution and allowance of large company patent applications. This apparently unequal application of the law comprises an apparent violation of 35 USC 3.

Because the claim rejections do not meet either standard of the APA, the prima facie case of non statutory subject matter and/or a lack of utility can not be properly established. Recognizing this clear error in the grounds for rejection will reverse the non statutory subject matter rejection of claim 43, claim 44, claim 45, claim 46, claim 48, claim 49, claim 50, claim 51 and claim 52.

Issue 8 - Whether the invention described in claim 54, claim 55, claim 56, claim 57, claim 58, claim 59, claim 60, claim 61, claim 62, claim 63, claim 64, claim 65 and claim 66 represents patentable subject matter under 35 U.S.C. 101?

The claims are patentable because the claim rejections are based on a number of errors in the facts and in the law. Because of these errors, the arguments presented by the Examiner fail to establish a prima facie case of a lack of utility and/or non statutory subject matter for every rejected claim as detailed below.

Errors 1 and 2 - Errors in the claim rejections caused by the apparent failure to establish a prima

facie case of non statutory subject matter include error 1 and error 2 identified under Issue 7.

Errors 3 and 4 – Errors in the claim rejections caused by a reliance on apparently false conclusory statements and a failure to acknowledge that the rejected claims meet the statutory requirements for allowable subject matter include error 3 and error 4 identified under Issue 7.

Errors 5 and 6 – Errors in the claim rejections caused by the apparent failure to meet any of the requirements of the APA include error 5 and error 6 identified under Issue 7.

Because the claim rejections do not meet either standard of the APA, the prima facie case of non statutory subject matter and/or a lack of utility can not be properly established. Recognizing this clear error in the grounds for rejection will reverse the non statutory subject matter rejection of claim 54, claim 55, claim 56, claim 57, claim 58, claim 59, claim 60, claim 61, claim 62, claim 63, claim 64, claim 65 and claim 66.

Issue 9 - Whether the invention described in claims claim 67, claim 68, claim 69, claim 70, claim 71, claim 72, claim 73, claim 74, claim 75, claim 76, claim 77, claim 78 and claim 79 represents patentable subject matter under 35 U.S.C. 101?

The claims are patentable because the claim rejections are based on a number of errors in the facts and in the law. Because of these errors, the arguments presented by the Examiner fail to establish a prima facie case of a lack of utility and/or non statutory subject matter for every rejected claim as detailed below.

Errors 1 and 2 - Errors in the claim rejections caused by the apparent failure to establish a prima facie case of non statutory subject matter include error 1 and error 2 identified under Issue 7.

Errors 3 and 4 – Errors in the claim rejections caused by a reliance on apparently false conclusory statements and a failure to acknowledge that the rejected claims meet the statutory requirements for allowable subject matter include error 3 and error 4 identified under Issue 7.

Errors 5 and 6 – Errors in the claim rejections caused by the apparent failure to meet any of the requirements of the APA include error 5 and error 6 identified under Issue 7.

Because the claim rejections do not meet either standard of the APA, the prima facie case of non statutory subject matter and/or a lack of utility can not be properly established. Recognizing this clear error in the grounds for rejection will reverse the non statutory subject matter rejection of claim 67, claim 68, claim 69, claim 70, claim 71, claim 72, claim 73, claim 74, claim 75, claim 76, claim 77, claim 78 and claim 79.

Issue 10 - Whether the invention described in claim 80, claim 81, claim 82, claim 83 and claim 84 represents patentable subject matter under 35 U.S.C. 101?

The claims are patentable because the claim rejections are based on a number of errors in the facts and in the law. Because of these errors, the arguments presented by the Examiner fail to establish a prima facie case of a lack of utility and/or non statutory subject matter for every rejected claim as detailed below.

Errors 1 and 2 - Errors in the claim rejections caused by the apparent failure to establish a prima facie case of non statutory subject matter include error 1 and error 2 identified under Issue 7.

Errors 3 and 4 – Errors in the claim rejections caused by a reliance on apparently false conclusory statements and a failure to acknowledge that the rejected claims meet the statutory requirements for allowable subject matter include error 3 and error 4 identified under Issue 7.

Errors 5 and 6 – Errors in the claim rejections caused by the apparent failure to meet any of the requirements of the APA include error 5 and error 6 identified under Issue 7.

Because the claim rejections do not meet either standard of the APA, the prima facie case of non statutory subject matter and/or a lack of utility can not be properly established. Recognizing this clear error in the grounds for rejection will reverse the non statutory subject matter rejection of claim 80, claim 81, claim 82, claim 83 and claim 84.

Issue 11 - Whether the invention described in claim 85 and claim 86 represents patentable subject matter under 35 U.S.C. 101?

The claims are patentable because the claim rejections are based on a number of errors in the facts and in the law. Because of these errors, the arguments presented by the Examiner fail to establish a prima facie case of a lack of utility and/or non statutory subject matter for every rejected claim as detailed below.

Errors 1 and 2 - Errors in the claim rejections caused by the apparent failure to establish a prima facie case of non statutory subject matter include: error 1 and error 2 identified under Issue 7.

Errors 3 and 4 – Errors in the claim rejections caused by a reliance on apparently false conclusory statements and a failure to acknowledge that the rejected claims meet the statutory requirements for allowable subject matter include error 3 and error 4 identified under Issue 7.

Errors 5 and 6 – Errors in the claim rejections caused by the apparent failure to meet any of the requirements of the APA include error 5 and error 6 identified under Issue 7.

Because the claim rejections do not meet either standard of the APA, the prima facie case of non statutory subject matter and/or a lack of utility can not be properly established. Recognizing this clear error in the grounds for rejection will reverse the non statutory subject matter rejection of claim

85 and claim 86.

Issue 12 - Whether claim 43, claim 44, claim 45, claim 46, claim 48, claim 49, claim 50, claim 51, claim 52, claim 54, claim 55, claim 56, claim 57, claim 58, claim 59, claim 60, claim 61, claim 62, claim 63, claim 64, claim 65 and claim 66, claim 67, claim 68, claim 69, claim 70, claim 71, claim 72, claim 73, claim 74, claim 75, claim 76, claim 77, claim 78, claim 79, claim 80, claim 81, claim 82, claim 83, claim 84, claim 85 and claim 86 are enabled under 35 U.S.C. 112, first paragraph?

The claims are patentable because the claim rejections are based on a number of errors in the facts and in the law. Because of these errors, the arguments presented by the Examiner fail to establish a *prima facie* case of a lack of enablement for every rejected claim as detailed below.

Errors 1 through 86 - It is well established that “*a description as filed is presumed to be adequate, unless or until sufficient evidence or reasoning to the contrary has been presented by the examiner to rebut the presumption*. See, e.g., *In re Marzocchi*, 439 F.2d 220, 224, 169 USPQ 367, 370 (CCPA 1971). The examiner, therefore, must have a reasonable basis to challenge the adequacy of the written description. The examiner has the initial burden of presenting by a preponderance of evidence why a person skilled in the art would not recognize in an applicant's disclosure a description of the invention defined by the claims. *Wertheim*, 541 F.2d at 263, 191 USPQ at 97. In rejecting a claim, the examiner must set forth express findings of fact regarding the above analysis which support the lack of written description conclusion. These findings should:(A) Identify the claim limitation at issue; and (B) Establish a *prima facie* case by providing reasons why a person skilled in the art at the time the application was filed would not have recognized that the inventor was in possession of the invention as claimed in view of the disclosure of the application as filed. A general allegation of “unpredictability in the art” is not a sufficient reason to support a rejection for lack of adequate written description.” Furthermore, it is well established that “*the test of enablement is whether one reasonably skilled in the art could make or use the invention from the disclosures in the patent coupled with information known in the art without undue experimentation*.” *United States v. Telecommunications, Inc.*, 857 F.2d 778, 785, 8 USPQ2d 1217, 1223 (Fed. Cir. 1988). This has been the primary test of enablement since 1916 (see *Mineral Separation v. Hyde*, 242 U.S. 261, 270 (1916)). The determination that “*undue experimentation*” would have been needed to make and use the claimed invention is not a single, simple factual determination (*In re Wands*, 858 F.2d 731, 8 USPQ2d 1400 (Fed. Cir. 1988)). Factors which need to be considered include: the nature of the invention, the state of the prior art, the predictability or lack thereof in the art, the amount of direction or guidance present, the presence or absence of working examples, the breadth of the claims, the relative skill of those in the art and the quantity of experimentation needed (hereinafter referred to as the Wands factors). A conclusion of

lack of enablement means that, based on the evidence regarding each of the above factors (the Wands factors), the specification, at the time the application was filed, would not have taught one skilled in the art how to make and/or use the full scope of the claimed invention without undue experimentation (In re Wright, 999 F.2d 1557, 1562, 27 USPQ2d 1510, 1513 (Fed. Cir. 1993)). Errors in the claim rejections caused by the apparent failure to establish a prima facie case of a lack of enablement include:

Errors 1 through 42) – Is a failure to acknowledge that no evidence has been presented to support the rejection of claim 43 (#1), claim 44 (#2), claim 45 (#3), claim 46 (#4), claim 48 (#5), claim 49 (#6), claim 50 (#7), claim 51 (#8), claim 52 (#9), claim 54 (#10), claim 55 (#11), claim 56 (#12), claim 57 (#13), claim 58 (#14), claim 59 (#15), claim 60 (#16), claim 61 (#17), claim 62 (#18), claim 63 (#19), claim 64 (#20), claim 65 (#21), claim 66 (#22), claim 67 (#23), claim 68 (#24), claim 69 (#25), claim 70 (#26), claim 71 (#27), claim 72 (#28), claim 73 (#29), claim 74 (#30), claim 75 (#31), claim 76 (#32), claim 77 (#33), claim 78 (#34), claim 79 (#35), claim 80 (#36), claim 81 (#37), claim 82 (#38), claim 83 (#39), claim 84 (#40), claim 85 (#41) and claim 86 (#42). As noted above, rejection under §112 first paragraph requires a preponderance of evidence and express findings of fact. In spite of this well known requirement, no facts have been identified and no evidence has been presented that excessive experimentation would be required and/or that the full scope of the claimed invention has not been described.

Errors 43 through 84) - Is a failure to acknowledge that the Wands factors have not been considered for claim 43 (#43), claim 44 (#44), claim 45 (#45), claim 46 (#46), claim 48 (#47), claim 49 (#48), claim 50 (#49), claim 51 (#50), claim 52 (#51), claim 54 (#52), claim 55 (#53), claim 56 (#54), claim 57 (#55), claim 58 (#56), claim 59 (#57), claim 60 (#58), claim 61 (#59), claim 62 (#60), claim 63 (#61), claim 64 (#62), claim 65 (#63), claim 66 (#64), claim 67 (#65), claim 68 (#66), claim 69 (#67), claim 70 (#68), claim 71 (#69), claim 72 (#70), claim 73 (#71), claim 74 (#72), claim 75 (#73), claim 76 (#74), claim 77 (#75), claim 78 (#76), claim 79 (#77), claim 80 (#78), claim 81 (#79), claim 82 (#80), claim 83 (#81), claim 84 (#82), claim 85 (#83) and claim 86 (#84). As noted above, rejection under §112 first paragraph requires a consideration of the Wands factors. In spite of this well known requirement, the Examiner has not completed a single aspect of the required Wands factor analysis.

Error #85). Is a failure to acknowledge that no claim limitation(s) at issue have been identified. The Examiner has expressed vague concerns regarding the specification but no

specific claim limitations have been identified as being at issue;

Error #86) Is a failure to acknowledge the evidence that has been presented. Evidence that the Examiner has apparently ignored includes:

- a) the summary of claimed subject matter; and
- b) the declaration submitted in support of this application, the declaration represents the only known independent review of the patent specification by an individual with an average skill in the relevant arts under either the pre or post KSR standards for determining the possession of said level of skill. Although the expert providing the declaration has considerable expertise in the development of network models of real world entities, the Examiner has chosen to ignore this declaration which states “*...I have concluded that it would be straightforward for anyone to duplicate the system for evaluating cash flow and elements of a business enterprise as claimed using the information in U.S. Patent Application 09/761,670 together with the patent it cross-references*” (see pages 67 - 69, Evidence Appendix).

Since the prima facie case to support the claim rejections has not been established, no rebuttal was (or is) required.

Error 87 – An additional error in the claim rejections for a lack of enablement is the result of the fact that the claim rejections are based on a conclusory statement that is demonstrably false. As discussed in prior Office Actions, as detailed in the specification and as outlined in the Summary of Claimed Subject Matter the claimed method relies on a method for model development that has been recognized as the best method for automatically developing robust network models (see Evidence Appendix, page 74). The conclusory statement that the claimed process is subjective is another indication that the individuals who authored and/or approved the relevant Office Action do not appear to understand the scientific and engineering principles associated with the pertinent arts. The claim rejections are improper because they are based on a conclusory statement that is incorrect. Recognizing this clear error in the grounds for rejection will reverse the lack of enablement rejections of claim 43, claim 44, claim 45, claim 46, claim 48, claim 49, claim 50, claim 51, claim 52, claim 54, claim 55, claim 56, claim 57, claim 58, claim 59, claim 60, claim 61, claim 62, claim 63, claim 64, claim 65 and claim 66, claim 67, claim 68, claim 69, claim 70, claim 71, claim 72, claim 73, claim 74, claim 75, claim 76, claim 77, claim 78, claim 79, claim 85 and claim 86.

Errors 88 and 89 – The claim rejections are based on 35 U.S.C. §112 first paragraph which states: *The specification shall contain a written description of the invention, and of the manner*

and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor of carrying out his invention. Errors in the claim rejections caused by the apparent failure to meet any of the statutory requirements for an enablement rejection include:

Error #88) Failure to acknowledge the fact that the specification meets the requirements of 35 U.S.C. §112 first paragraph. As illustrated by the preceding discussion of errors 1 through 87, the enablement rejection appears to be based of a non-existent standard for written description enablement. As detailed under error 86, the rejected claims clearly and completely describe a robust process for developing network models.

Error #89) Failure to acknowledge the fact that the claim rejections have been authored by individuals who appear to lack the level of skill in the art required to author such rejections. It is well established that the "*hypothetical ‘person having ordinary skill in the art’ to which the claimed subject matter pertains would, of necessity have the capability of understanding the scientific and engineering principles applicable to the pertinent art*" *Ex parte Hiyamizu*, 10 USPQ2d 1393, 1394 (Bd. Pat. App. & Inter. 1988). It is unlikely that anyone who understood the scientific and engineering principles applicable to the pertinent art would ever suggest Sandretto, Jost and/or Barr as a reference in support of an obviousness rejection for the claimed inventions for the reasons described previously under Issue 1, Issue 2 and Issue 3. As noted previously, many of the several hundred errors identified in the claim rejections appear to be based on a basic misunderstanding regarding the teachings of the Sandretto and Jost documents that may be another indication of the lack of understanding of the scientific and engineering principles applicable to the pertinent art.

Errors 90 and 91 – In *Dickinson v. Zurko*, 119 S. Ct. 1816, 50 USPQ2d 1930 (1999), the Supreme Court held that the appropriate standard of review of U.S.P.T.O. findings are the standards set forth in the Administrative Procedure Act ("APA") at 5 U.S.C. 706 (1994). The APA provides two standards for review – an arbitrary and capricious standard and a substantial evidence standard. Errors in the claim rejections caused by the apparent failure to meet any of the requirements of the APA include:

Error #90) Failure to acknowledge the fact that the claim rejections fail under the substantial evidence standard. Errors 1 through 89 clearly show that the relevant Office Action fails to provide even a scintilla of evidence to support the lack of enablement rejections of all rejected claims and that as a result the rejections fail to meet the substantial evidence

standard.

Error #91) Failure to acknowledge the fact that the claim rejections fail under the arbitrary and capricious standard. The Appellant respectfully submits that the enablement rejection of claim 43, claim 44, claim 45, claim 46, claim 48, claim 49, claim 50, claim 51, claim 52, claim 54, claim 55, claim 56, claim 57, claim 58, claim 59, claim 60, claim 61, claim 62, claim 63, claim 64, claim 65 and claim 66, claim 67, claim 68, claim 69, claim 70, claim 71, claim 72, claim 73, claim 74, claim 75, claim 76, claim 77, claim 78, claim 79, claim 80, claim 81, claim 82, claim 83, claim 84, claim 85 and claim 86 also fails to pass the arbitrary and capricious test for a number of reasons including the fact that:

- a) as detailed above under errors 1 through 87, the evidence clearly shows that there is no evidence to support the rejection of a single claim;
- b) there is no rational connection between the statutory requirements for enablement, the agency fact findings and the rejection of the claims (see errors 88 and 89),
- c) there is no rational connection between the rejection for a lack of enablement and the prior agency fact findings associated with U.S. Patent 6,249,768,
- d) there is no rational connection between the rejection for alleged subjectivity and the prior agency fact findings associated with Barr, and
- e) prior agency fact-findings have shown that 35 U.S.C. 112 first paragraph requirements for enablement are apparently not always considered during the prosecution and allowance of large company patent applications (i.e. U.S. Patent 6,249,768). This apparently unequal application of the law comprises an apparent violation of 35 USC 3.

Because the claim rejections do not meet either standard of the APA, the prima facie case of a lack of enablement cannot be properly established.

Issue 13 - Whether claim 43, claim 44, claim 45, claim 46, claim 48, claim 49, claim 50, claim 51, claim 52, claim 54, claim 55, claim 56, claim 57, claim 58, claim 59, claim 60, claim 61, claim 62, claim 63, claim 64, claim 65 and claim 66, claim 67, claim 68, claim 69, claim 70, claim 71, claim 72, claim 73, claim 74, claim 75, claim 76, claim 77, claim 78 and claim 79 are indefinite under 35 U.S.C. 112, second paragraph?

The claims are patentable because the claim rejections are based on a number of errors in the facts and in the law. Because of these errors, the arguments presented by the Examiner fail to establish a prima facie case of claim indefiniteness for every rejected claim as detailed below.

Errors 1 through 140 – It is well established that: *the definiteness of claim language must be*

analyzed, not in a vacuum, but in light of: (A) The content of the particular application disclosure; (B) The teachings of the prior art; and (C) The claim interpretation that would be given by one possessing the ordinary level of skill in the pertinent art at the time the invention was made. In reviewing a claim for compliance with 35 U.S.C. 112, second paragraph, the examiner must consider the claim as a whole to determine whether the claim apprises one of ordinary skill in the art of its scope and, therefore, serves the notice function required by 35 U.S.C. 112, second paragraph, by providing clear warning to others as to what constitutes infringement of the patent. See, e.g., Solomon v. Kimberly-Clark Corp., 216 F.3d 1372, 1379, 55 USPQ2d 1279, 1283 (Fed. Cir. 2000). See also In re Larsen, No. 01-1092 (Fed. Cir. May 9, 2001). Errors in the claim rejections caused by the apparent failure to establish a prima facie case of claim indefiniteness include:

Errors #1 through #35) Is a failure to acknowledge that all the terms used in rejected claim 43 (#1), claim 44 (#2), claim 45 (#3), claim 46 (#4), claim 48 (#5), claim 49 (#6), claim 50 (#7), claim 51 (#8), claim 52 (#9), claim 54 (#10), claim 55 (#11), claim 56 (#12), claim 57 (#13), claim 58 (#14), claim 59 (#15), claim 60 (#16), claim 61 (#17), claim 62 (#18), claim 63 (#19), claim 64 (#20), claim 65 (#21), claim 66 (#22), claim 67 (#23), claim 68 (#24), claim 69 (#25), claim 70 (#26), claim 71 (#27), claim 72 (#28), claim 73 (#29), claim 74 (#30), claim 75 (#31), claim 76 (#32), claim 77 (#33), claim 78 (#34) and claim 79 (#35) all have well recognized meanings which allows the reader to infer the meaning of the entire phrase with reasonable confidence (see *Bancorp Services, L.L.C. v. Hartford Life Ins. Co.*, 359 F.3d 1367, 1372, 69 USPQ2d 1996, 1999-2000 (Fed. Cir. 2004).

Errors #36, through #70) – Is a failure to acknowledge that no evidence has been provided to indicate that rejected claim 43 (#36), claim 44 (#37), claim 45 (#38), claim 46 (#39), claim 48 (#40), claim 49 (#41), claim 50 (#42), claim 51 (#43), claim 52 (#44), claim 54 (#45), claim 55 (#46), claim 56 (#47), claim 57 (#48), claim 58 (#49), claim 59 (#50), claim 60 (#51), claim 61 (#52), claim 62 (#53), claim 63 (#54), claim 64 (#55), claim 65 (#56), claim 66 (#57), claim 67 (#58), claim 68 (#59), claim 69 (#60), claim 70 (#61), claim 71 (#62), claim 72 (#63), claim 73 (#64), claim 74 (#65), claim 75 (#66), claim 76 (#67), claim 77 (#68), claim 78 (#69), claim 79 (#70) do not *particularly point out or distinctly claim* the disclosed invention to someone of average skill in the art. As discussed previously and as detailed above and below, all the claim rejections are based on conclusory statements. Furthermore, there is substantial evidence that the conclusory statements were authored and approved by individuals who do not appear to have the requisite level of skill in the relevant arts.

Errors #71 through #105) - Is a failure to acknowledge that “*there is no requirement that the words in the claim must match those used in the specification disclosure,*” and “*Obviously, the failure to provide explicit antecedent basis for terms does not always render a claim indefinite.*” MPEP §2173.02 states: “*Some latitude in the manner of expression and the aptness of terms should be permitted even though the claim language is not as precise as the examiner might desire.*” (see *In re Robert Skvorecz*, CAFC 2008-1221). Furthermore, there was a related failure to acknowledge that rejected 43 (#71), claim 44 (#72), claim 45 (#73), claim 46 (#74), claim 48 (#75), claim 49 (#76), claim 50 (#77), claim 51 (#78), claim 52 (#79), claim 54 (#80), claim 55 (#81), claim 56 (#82), claim 57 (#83), claim 58 (#84), claim 59 (#85), claim 60 (#86), claim 61 (#87), claim 62 (#88), claim 63 (#89), claim 64 (#90), claim 65 (#91), claim 66 (#92), claim 67 (#93), claim 68 (#94), claim 69 (#95), claim 70 (#96), claim 71 (#97), claim 72 (#98), claim 73 (#99), claim 74 (#100), claim 75 (#101), claim 76 (#102), claim 77 (#103), claim 78 (#104), claim 79 (#105) do not contain a term that does not have proper antecedent basis where such basis is not otherwise present by implication or the meaning is not reasonably ascertainable (*Halliburton Energy Services, Inc. v. M-I LLC*, 514 F.3d 1244, 1255, 85 USPQ2d 1663 (Fed. Cir. 2008) and *Halliburton*, 514 F.3d at 1246, 85 USPQ2d at 1658 (Citing *Biomedino, LLC v. Waters Techs. Corp.*, 490 F.3d 946, 950 (Fed. Cir, 2007)).

Errors #106 and #140) – Is a failure to acknowledge that the prior art describes the metes and bounds of rejected 43 (#106), claim 44 (#107), claim 45 (#108), claim 46 (#109), claim 48 (#110), claim 49 (#111), claim 50 (#112), claim 51 (#113), claim 52 (#114), claim 54 (#115), claim 55 (#116), claim 56 (#117), claim 57 (#118), claim 58 (#119), claim 59 (#120), claim 60 (#121), claim 61 (#122), claim 62 (#123), claim 63 (#124), claim 64 (#125), claim 65 (#126), claim 66 (#127), claim 67 (#128), claim 68 (#129), claim 69 (#130), claim 70 (#131), claim 71 (#132), claim 72 (#133), claim 73 (#134), claim 74 (#135), claim 75 (#136), claim 76 (#137), claim 77 (#138), claim 78 (#139), claim 79 (#140). For example, a review of the prior art shows that the description of the network models in the rejected independent claims (43, 54 and 67) mirrors the formal, mathematical definition of a network as shown below:

More formally, a network contains a set of objects (in mathematical terms, nodes) and a mapping or description of relations between the objects or nodes. The simplest network contains two objects, 1 and 2, and one relationship that links them.”

The formal network definition was previously provided by the Appellant (see page 75,

Evidence Appendix).

Errors 141 and 142 – The claim rejections are based on 35 U.S.C. §112 second paragraph which states: *The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.* Errors in the claim rejections caused by the apparent failure to meet any of the statutory requirements for an indefinite claim rejection include:

Error #141) Failure to acknowledge the fact that the rejected claims meet the requirements of 35 U.S.C. §112 second paragraph. As illustrated by the preceding discussion of errors 1 through 32, the enablement rejection appears to be based on an unknown and non-existent standard for claim definiteness.

Error #142) Failure to acknowledge the fact that the claim rejections have been authored by individuals who appear to lack the level of skill in the art required to author such rejections. It is well established that the “*hypothetical ‘person having ordinary skill in the art’ to which the claimed subject matter pertains would, of necessity have the capability of understanding the scientific and engineering principles applicable to the pertinent art*” *Ex parte Hiyamizu*, 10 USPQ2d 1393, 1394 (Bd. Pat. App. & Inter. 1988). One indication of the apparent lack of understanding of the scientific and engineering principles applicable to the pertinent art is the arbitrary and capricious rejection of the pending claims for alleged subjectivity. The declaration under rule 132 (see Evidence Appendix, pages 67 - 69) does provide the opinion of someone possessing the ordinary or average skill in the pertinent art and it completely rebuts the claim rejections: “*U.S. Patent Application 09/761,670 together with the patent it cross-references fully describes: 1) A framework system (claim 43 and associated claims 44-46 and 48-52); 2) A firm analysis method (claim 54 and associated claims 55-66); 3) A computer readable media for firm analysis (claim 67 and associated claims 68-79).*”

Errors 143 and 144 – In *Dickinson v. Zurko*, 119 S. Ct. 1816, 50 USPQ2d 1930 (1999), the Supreme Court held that the appropriate standard of review of U.S.P.T.O. findings are the standards set forth in the Administrative Procedure Act (“APA”) at 5 U.S.C. 706 (1994). The APA provides two standards for review – an arbitrary and capricious standard and a substantial evidence standard. Errors in the claim rejections caused by the apparent failure to meet any of the requirements of the APA include:

Error #143) Failure to acknowledge the fact that the claim rejections fail under the

substantial evidence standard. Errors 1 through 142 clearly show that the relevant Office Action fails to provide even a scintilla of evidence to support the rejections for indefiniteness for claim 43, claim 44, claim 45, claim 46, claim 48, claim 49, claim 50, claim 51, claim 52, claim 54, claim 55, claim 56, claim 57, claim 58, claim 59, claim 60, claim 61, claim 62, claim 63, claim 64, claim 65 and claim 66, claim 67, claim 68, claim 69, claim 70, claim 71, claim 72, claim 73, claim 74, claim 75, claim 76, claim 77, claim 78 and claim 79 and that as a result the rejections fail to meet the substantial evidence standard.

Error #144) Failure to acknowledge the fact that the claim rejections fail under the arbitrary and capricious standard. The Appellant respectfully submits that the rejection of claim 43, claim 44, claim 45, claim 46, claim 48, claim 49, claim 50, claim 51, claim 52, claim 54, claim 55, claim 56, claim 57, claim 58, claim 59, claim 60, claim 61, claim 62, claim 63, claim 64, claim 65 and claim 66, claim 67, claim 68, claim 69, claim 70, claim 71, claim 72, claim 73, claim 74, claim 75, claim 76, claim 77, claim 78 and claim 79 for indefiniteness also fails to pass the arbitrary and capricious test for a number of reasons including the fact that:

- a) as detailed above under errors 1 through 140, there is no evidence that the claims are indefinite;
- b) there is no rational connection between the statutory requirements for definiteness, the agency fact findings and the rejection of the claims (see errors 141 and 142),
- c) there is no rational connection between the rejection for claim indefiniteness and the prior agency fact findings associated with U.S. Patent 6,249,768,
- d) there is no rational connection between the rejection for claim indefiniteness and the prior agency fact findings associated with Barr, and
- e) prior agency fact-findings have shown that 35 U.S.C. 112 second paragraph requirements for enablement are apparently not always considered during the prosecution and allowance of large company patent applications (i.e. U.S. Patent 6,249,768). This apparently unequal application of the law comprises an apparent violation of 35 USC 3.

Because the claim rejections do not meet either standard of the APA, the *prima facie* case of claim indefiniteness cannot be properly established.

Summarizing the above, the Appellant respectfully submits that the Examiner has failed to produce the evidence required to satisfy the requirements of the APA and/or establish a *prima facie* case that a single claim is indefinite.

Issue 13 - Whether claim 80, claim 81, claim 82, claim 83 and/or claim 84 are indefinite under 35 U.S.C. 112, second paragraph?

The claims are patentable because the claim rejections are based on a number of errors in the facts and in the law. Because of these errors, the arguments presented by the Examiner fail to establish a *prima facie* case of claim indefiniteness for every rejected claim as detailed below.

Errors 1 through 20 – Errors in the claim rejections caused by the apparent failure to establish a *prima facie* case of claim indefiniteness include:

Errors #1, #2, #3, #4 and #5) Is a failure to acknowledge that all the terms used in rejected claim 80 (#1), claim 81 (#2), claim 82 (#3), claim 83 (#4) and claim 84 (#5) all have well recognized meanings which allows the reader to infer the meaning of the entire phrase with reasonable confidence (see *Bancorp Services, L.L.C. v. Hartford Life Ins. Co.*, 359 F.3d 1367, 1372, 69 USPQ2d 1996, 1999-2000 (Fed. Cir. 2004)).

Errors #6, #7, #8, #9 and #10) – Is a failure to acknowledge that no evidence has been provided to indicate that rejected claim 80 (#6), claim 81 (#7), claim 82 (#8), claim 83 (#9) and claim 84 (#10) do not *particularly point out or distinctly claim* the disclosed invention to someone of average skill in the art. As discussed previously and as detailed above and below, all the claim rejections are based on conclusory statements. Furthermore, there is substantial evidence that the conclusory statements were authored and approved by individuals who do not appear to have the requisite level of skill in the relevant arts. The declaration under rule 132 (see Evidence Appendix, pages 67 – 69) does provide the opinion of someone possessing the ordinary or average skill in the pertinent art and it completely rebuts the claim rejections: “*U.S. Patent Application 09/761,670 together with the patent it cross-references fully describes: 4) An enterprise data integration method (claim 80 and associated claims 81-84).*”

Errors #11, #12, #13, #14 and #15) - Is a failure to acknowledge that “*there is no requirement that the words in the claim must match those used in the specification disclosure,*” and “*Obviously, the failure to provide explicit antecedent basis for terms does not always render a claim indefinite.*” MPEP §2173.02 states: “*Some latitude in the manner of expression and the aptness of terms should be permitted even though the claim language is not as precise as the examiner might desire.*” (see *In re Robert Skvorecz*, CAFC 2008-1221). Furthermore, there was a related failure to acknowledge that rejected claim 80 (#11), claim 81 (#12), claim 82 (#13), claim 83 (#14) and claim 84 (#15) do not contain a term that does not have proper antecedent basis where such basis is not

otherwise present by implication or the meaning is not reasonably ascertainable (*Halliburton Energy Services, Inc. v. M-I LLC*, 514 F.3d 1244, 1255, 85 USPQ2d 1663 (Fed. Cir. 2008) and *Halliburton*, 514 F.3d at 1246, 85 USPQ2d at 1658 (Citing *Biomedino, LLC v. Waters Techs. Corp.*, 490 F.3d 946, 950 (Fed. Cir, 2007).

Errors #16, #17, #18, #19 and #20) – Is a failure to acknowledge that the specification describes the metes and bounds of rejected: rejected claim 80 (#16), claim 81 (#17), claim 82 (#18), claim 83 (#19) and claim 84 (#20).

Errors 21 and 22 – Errors in the claim rejections caused by the apparent failure to meet any of the statutory requirements for an indefinite claim rejection include error 141 and error 142 identified under Issue 13.

Errors 23 and 24 – Errors in the claim rejections caused by the apparent failure to meet any of the requirements of the APA include error 143 and error 144 identified under Issue 13. Because the claim rejections do not meet either standard of the APA, the *prima facie* case of claim indefiniteness cannot be properly established.

Summarizing the above, the Appellant respectfully submits that the Examiner has failed to produce the evidence required to satisfy the requirements of the APA and/or establish a *prima facie* case that a single claim is indefinite.

Issue 14 - Whether claim 85 and/or claim 86 are indefinite under 35 U.S.C. 112, second paragraph?

The claims are patentable because the claim rejections are based on a number of errors in the facts and in the law. Because of these errors, the arguments presented by the Examiner fail to establish a *prima facie* case of claim indefiniteness for every rejected claim as detailed below.

Errors 1 through 8 – Errors in the claim rejections caused by the apparent failure to establish a *prima facie* case of claim indefiniteness include:

Errors #1 and #2) Is a failure to acknowledge that all the terms used in rejected claim 86 (#1) and claim 87 (#2) all have well recognized meanings which allows the reader to infer the meaning of the entire phrase with reasonable confidence (see *Bancorp Services, L.L.C. v. Hartford Life Ins. Co.*, 359 F.3d 1367, 1372, 69 USPQ2d 1996, 1999-2000 (Fed. Cir. 2004).

Errors #3 and #4) – Is a failure to acknowledge that no evidence has been provided to indicate that rejected claim 85 (#3) and claim 86 (#4) do not *particularly point out or distinctly claim* the disclosed invention to someone of average skill in the art. As discussed

previously and as detailed above and below, all the claim rejections are based on inaccurate conclusory statements. Furthermore, there is substantial evidence that the conclusory statements were authored and approved by individuals who do not appear to have the requisite level of skill in the relevant arts. The declaration under rule 132 (see Evidence Appendix, pages 67 - 69) does provide the opinion of someone possessing the ordinary or average skill in the pertinent art and it completely rebuts the claim rejections: “*U.S. Patent Application 09/761,670 together with the patent it cross-references fully describes: 4) An intelligent method for analyzing commerce data using a computer (claim 85 and associated claim 86).*”

Errors #5 and #6) - Is a failure to acknowledge that “*there is no requirement that the words in the claim must match those used in the specification disclosure,*” and “*Obviously, the failure to provide explicit antecedent basis for terms does not always render a claim indefinite.*” MPEP §2173.02 states: “*Some latitude in the manner of expression and the aptness of terms should be permitted even though the claim language is not as precise as the examiner might desire.*” (see *In re Robert Skvorecz*, CAFC 2008-1221). Furthermore, there was a related failure to acknowledge that rejected claim 85 (#5) and claim 86 (#6) do not contain a term that does not have proper antecedent basis where such basis is not otherwise present by implication or the meaning is not reasonably ascertainable (*Halliburton Energy Services, Inc. v. M-I LLC*, 514 F.3d 1244, 1255, 85 USPQ2d 1663 (Fed. Cir. 2008) and *Halliburton*, 514 F.3d at 1246, 85 USPQ2d at 1658 (Citing *Biomedino, LLC v. Waters Techs. Corp.*, 490 F.3d 946, 950 (Fed. Cir. 2007)).

Errors #7 and #8) – Is a failure to acknowledge that the specification describes the metes and bounds of rejected: rejected claim 85 (#7) and claim 86 (#8).

Errors 9 and 10 – Errors in the claim rejections caused by the apparent failure to meet any of the statutory requirements for an indefinite claim rejection include error 141 and error 142 identified under Issue 13.

Errors 11 and 12 – Errors in the claim rejections caused by the apparent failure to meet any of the requirements of the APA include:

Error #11) Failure to acknowledge the fact that the claim rejections fail under the substantial evidence standard. Errors 1 through 10 clearly show that the relevant Office Action fails to provide even a scintilla of evidence to support the rejections for indefiniteness for claim 85 and claim 86 and that as a result the rejections fail to meet the substantial evidence

standard.

Error #12) Failure to acknowledge the fact that the claim rejections fail under the arbitrary and capricious standard. The Appellant respectfully submits that the rejection of claim 85 and claim 86 for indefiniteness also fails to pass the arbitrary and capricious test for a number of reasons including the fact that:

- a) as detailed above under errors 1 through 8, there is no evidence that the claims are indefinite;
- b) there is no rational connection between the statutory requirements for definiteness, the agency fact findings and the rejection of the claims (see errors 9 and 10),
- c) there is no rational connection between the rejection for claim indefiniteness and the prior agency fact findings associated with U.S. Patent 6,249,768,
- d) there is no rational connection between the rejection for claim indefiniteness and the prior agency fact findings associated with Barr, and
- e) prior agency fact-findings have shown that 35 U.S.C. 112 second paragraph requirements for enablement are apparently not always considered during the prosecution and allowance of large company patent applications (i.e. U.S. Patent 6,249,768). This apparently unequal application of the law comprises an apparent violation of 35 USC 3.

Because the claim rejections do not meet either standard of the APA, the *prima facie* case of claim indefiniteness cannot be properly established.

Summarizing the above, the Appellant respectfully submits that the Examiner has failed to produce the evidence required to satisfy the requirements of the APA and/or establish a *prima facie* case that a single claim is indefinite.

8. Conclusion

The Appellant notes that with respect to the prosecution of the instant application, it appears that the U.S.P.T.O. has not fully complied with the requirements set forth in the APA, 35 U.S.C. 3, 35 U.S.C. 131, 37 CFR 1.97 and 37 CFR 1.98. It is well established that a valid patent application rejection requires substantial evidence (Gartside, 203 F.3d at 1312). As described in the preceding section, the November 12, 2008 Office Action does not contain any evidence that would support the rejection of a single claim. However, related appeals and the November 12, 2008 Office Action for the instant application do provide substantial evidence that: those authoring/signing the Office Action do not appear to understand any of the scientific and/or engineering principles applicable to the pertinent art. Furthermore, those authoring the Office Action do not appear to adhere to any of the well established statutory requirements for authoring valid claim rejections and those authoring the relevant Office Action appear to have based the claim rejections on the application legal standards that are not applied during the review and allowance of similar applications filed by larger companies.

For the reasons detailed above, the Appellant respectfully but forcefully contends that each claim is patentable. Therefore, reversal of all rejections is courteously solicited.

Respectfully submitted,

Asset Trust, Inc.

/B.J. Bennett/

B.J. Bennett, President,

Dated: September 14, 2009

9. Claims Appendix

43. A framework system, comprising:

a computer with a processor having circuitry to execute instructions; a storage device available to said processor with sequences of instructions stored therein, which when executed cause the processor to:

obtain a plurality of data related to a value of a business enterprise in a format suitable for processing,

evolve a plurality of network models for connecting one or more elements of value of said firm to one or more aspects of financial performance of said firm, said network models being further comprised of:

input nodes, hidden nodes and output nodes where each input node represents an element of value and each output node represents an aspect of financial performance; and

a plurality of relationships between said nodes, each said relationship being characterized by a degree of influence from one node to another; said degree of influence being dependent upon an impact of the element of value represented by said node and its interrelationship with other elements of value

where each network model from a plurality of network models supports the development of a controlling forecast for use in optimizing purchasing.

44. The framework system claimed in claim 43 where one or more aspects of financial performance are selected from the group consisting of revenue, expense, capital change, market value and combinations thereof.

45. The framework system of claim 43 wherein a network model further comprises:

a summary of value drivers by element of value applied to each of said input nodes, where said summaries summarize the impact of each of said elements of value on one or more aspects of financial performance, the other elements of value and combinations thereof.

46. The framework system of claim 43 further comprising means for training a best fit network model that identifies a relative impact of each element of value on each component of value where the weights from the best fit models are used to identify the relative contribution of each element of value to each component of value net of any impact on the other elements of value.

48. The framework system claimed in claim 43 where a plurality of relationships are quantified for a specified point in time within a sequential series of points in time.
49. The framework system of claim 43 where a relative contribution to the components of value are combined with the present value of said components of value to determine a current operation value of each element of value where the components of value are selected from the group consisting of revenue, expense, capital change and combinations thereof.
50. The framework system of claim 43 where an element of value is selected from the group consisting of brands, customers, employees, and combinations thereof.
51. The framework system of claim 43 where a plurality of network models further comprise a plurality of neural network models that are trained using genetic algorithms.
52. The framework system of claim 43, wherein a plurality of network models further comprise a plurality of business event network models.
54. A firm analysis method, comprising:
- aggregating firm related data from a plurality of systems in accordance with a common data dictionary
 - using at least a portion of the data to generate a plurality of network models which connect one or more current elements of value of said firm to one or more aspects of financial performance of said firm, said network models being further comprised of:
 - one or more input nodes, hidden nodes and output nodes where each input node represents an element of value and each output node represents an aspect of financial performance, and
 - a plurality of relationships where each relationship is a function of an impact of each element on other elements of value or an aspect of financial performance;
 - where each network model from a plurality of network models supports the development of a controlling forecast for use in optimizing purchasing.
55. The method of claim 54 where one or more aspects of financial performance are selected from the group consisting of revenue, expense, capital change, market value and combinations thereof.

56. The method of claim 54 wherein said network models further comprise:
a summary of value drivers by element of value applied to each of said input nodes, where
said summaries summarize the impact of each of said elements of value on one or more
aspects of financial performance, the other elements of value and combinations thereof.
57. The method of claim 54 where one or more weights from a best fit model are used to identify
a net impact of each element of value on a component of value selected from the group
consisting of revenue, expense, capital change and combinations thereof.
58. The method of claim 54 further comprising training one or more best fit network models that
identify a relative impact of each element of value on each of the components of value where one
or more weights from the best fit models are used to identify a relative contribution of each
element of value to each component of value net of any impact on the other elements of value.
59. The method of claim 58 further comprising training one or more best fit network models using
one or more genetic algorithms.
60. The method of claim 54 where a plurality of relationships are quantified for a specified point in
time within a sequential series of points in time.
61. The system of claim 54 where a relative contribution to one or more components of value is
combined with a present value of said components of value to determine a current operation
value of each element of value.
62. The method of claim 54 where one or more elements of value are selected from the group
consisting of brands, customers, employees, and combinations thereof.
63. The method of claim 54 where network models further comprise neural network models.
64. The method of claim 54 where a firm is a product, a group of products, a division or a
company.
65. The method of claim 54 wherein a plurality of network models further comprise a plurality of

business event network models.

66. The method of claim 54 where firm related data includes data captured from the group consisting of a basic financial system, a human resource system, an advanced financial system, a sales system, an operations system, accounts receivable system, accounts payable system, capital asset system, inventory system, invoicing system, payroll system, purchasing system, the Internet and combinations thereof.

67. A computer readable medium having sequences of instructions stored therein, which when executed cause the processor in a computer to perform a firm analysis method, comprising:

integrating business related data for a firm using a common dictionary,

using at least a portion of the data to generate a plurality of network models which connect one or more elements of value of said firm to one or more aspects of financial performance of said firm, said network models being further comprised of:

one or more input nodes, hidden nodes and output nodes where each input node represents an element of value and each output node represents an aspect of financial performance and

a plurality of relationships where each relationship is a function of the impact of each element on other elements of value or an aspect of financial performance

where each network model from a plurality of network models supports the development of a controlling forecast for use in optimizing purchasing.

68. The computer readable medium of claim 67 where one or more aspects of financial performance are selected from the group consisting of revenue, expense, capital change, market value and combinations thereof.

69. The computer readable medium of claim 67 wherein a network model further comprises:

a summary of value drivers by element of value applied to each of said input nodes, where said summaries summarize the impact of each of said elements of value on one or more aspects of financial performance, the other elements of value and combinations thereof.

70. The computer readable medium of claim 67 where one or more weights from a best fit model are used to identify a net impact of an element of value on revenue, expense and capital change.

71. The computer readable medium of claim 67 where the method further comprises:

training a best fit network model to identify a relative impact of an element of value on a component of value where one or more weights from the best fit model are used to identify a relative contribution of each element of value to a component of value net of any impact on the other elements of value.

72. The computer readable medium of claim 71 where the method further comprises: using one or more genetic algorithms to train a best fit network model.

73. The computer readable medium of claim 67 where the relationships are quantified for a specified point in time within a sequential series of points in time.

74. The computer readable medium of claim 67 where the relative contributions to the components of value are combined with the present value of said components of value to determine the current operation value of each element of value where the components of value are revenue, expense and capital change.

75. The computer readable medium of claim 67 where the elements of value are selected from the group consisting of brands, customers, employees, and combinations thereof.

76. The computer readable medium of claim 67 where the network models are neural nets.

77. The computer readable medium of claim 67 where the firm is a product, a group of products, a division or a company.

78. The computer readable medium of claim 67 wherein a plurality of network models further comprise a plurality of business event network models.

79. The computer readable medium of claim 67 where firm data includes data captured from the group consisting of a basic financial system, a human resource system, an advanced financial system, a sales system, an operations system, accounts receivable system, accounts payable system, capital asset system, inventory system, invoicing system, payroll system, purchasing system, the Internet and combinations thereof.

80. An enterprise data integration method, comprising:

accessing a plurality of data representative of an enterprise via an interface coupled to a plurality of data sources,

converting said data to a common schema using an application software segment, and storing said converted data in a database for use in processing,

where a plurality of sources further comprise database management systems for systems selected from the group consisting of a basic financial system, a human resource system, an advanced financial system, a sales system, an operations system, an accounts receivable system, an accounts payable system, a capital asset system, an inventory system, an invoicing system, a payroll system, a purchasing system and combinations thereof.

81. The method of claim 80 wherein a plurality of sources further comprise a plurality of relational databases where said databases use different data formats.
82. The method of claim 80 wherein an interface further comprises a network connection.
83. The method of claim 80 wherein a common schema further comprises a network schema and said common schema contains a common data dictionary where said common data dictionary defines common attributes selected from the group consisting of elements of value, components of value, currencies, units of measure, time periods, dates and combinations thereof.
84. The method of claim 80 wherein the method further comprises completing a conversion and storage of data before processing begins.
85. An intelligent method for analyzing commerce data using a computer, comprising:
 - identifying a set of data required for analyzing a commercial enterprise,
 - preparing the identified set of data for use in analysis,
 - analyzing at least a portion of said data in an automated fashion as required to identify one or more statistics selected from the group consisting of pattern, trend, ratio, average, elapsed time period, percentage, variance, monthly total and combinations thereof, and
 - using at least a portion of said statistics and data to develop a model of enterprise current operation financial performance using automated learning
 - where the model mathematically expresses the dynamic characteristics and behavior of each element of value as including direct effects and indirect effects from each element of value.
86. The method of claim 85 wherein the method further comprises using a plurality of genetic algorithms to automatically learn from the data by using processing steps selected from the group consisting of fitness measure re-scaling, random mutation, recalibrating target fitness levels, selective crossover, selective carry-forward and combinations thereof.

10. Evidence Appendix

- Pages 67 – 69 declaration under rule 132, received September 10, 2006
- Page 70 excerpt from Office Action mailed May 9, 2006
- Pages 71 - 72 excerpt from Office Action mailed January 3, 2007
- Page 73 excerpt from Examiner's Answer mailed January 9, 2008
- Page 74 excerpt from reference received March 10, 2008
- Page 75 excerpt from Supplemental Amendment received January 31, 2006
- Page 76 excerpt from reference reviewed September 30, 2005
- Page 77 excerpts from reference reviewed April 14, 2006

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appl. No.: 09/761,670

Applicant: Jeff S. Eder

Filed: January 18, 2001

Art Unit: 3628

Examiner: Siegfried Chencinski

Docket No.: AR-16

Customer No.: 53787

DECLARATION UNDER RULE 132

I, Rick Rauenzahn, do hereby declare and say:

My home address is 529 Calle don Leandro, Espanola, New Mexico 87532; I have a B.S. degree in chemical engineering from Lehigh University, an S.M. degree in chemical engineering from The Massachusetts Institute of Technology and a Ph.D. in chemical engineering from The Massachusetts Institute of Technology;

I have worked in the mathematical modeling field for 25 years, concentrating in the disciplines of fluid mechanics, turbulence modeling, numerical methods for partial differential equations, radiation hydrodynamics, and strength of materials. I also have extensive knowledge of computer system administration, particularly for Windows-based, Linux, and Unix systems; I have been employed by Los Alamos National Laboratory and Molten Metal Technologies for the past 23

years.

I further declare that I do not have any direct affiliation with the application owner, Asset Reliance, Inc. I met the inventor for the first time in April 2006. While I joined the Technical Advisory Board for Knacta, Inc., a company run by the inventor in May of 2006, I have not attended a meeting or completed any assignments for the Technical Advisory Board as of the date of this declaration. I have never discussed this patent application or any of the other patent applications owned by Asset Reliance with the inventor or anyone else. Knacta, Inc. has a license to the intellectual property associated with this application.

On August 2, 2006 I was given a copy of U.S. Patent Application 09/761,670 entitled "A method of and system for evaluating cash flow and elements of a business enterprise" filed in the United States Patent Office on January 18, 2001. Until that time I had not read the patent application. I have studied the entire specification in order to closely analyze the claims and drawings. I am totally familiar with the language of the claims and conversant with the scope thereof. I completely understand the invention as claimed.

Based on my experience and training in the field of mathematical modeling and electronic data processing, I have concluded that it would be straightforward for someone of average skill in the art to duplicate the system for evaluating cash flow and elements of a business enterprise as claimed using the information in U.S. Patent Application 09/761,670 together with the patent it cross-references.

Specifically, U.S. Patent Application 09/761,670 together with the patent it cross-references fully describes:

- 1) A framework system (claim 43 and associated claims 44-46 and 48-52);
- 2) A firm analysis method (claim 54 and associated claims 55-66);
- 3) A computer readable media for firm analysis (claim 67 and associated claims 68-79);
- 4) An enterprise data integration method (claim 80 and associated claims 81-

84); and

- 5) An intelligent method for analyzing commerce data using a computer (claim 85 and associated claim 86).

Based on these and other considerations, it is my professional opinion that U.S. Patent Application 09/761,670 together with the patent it cross-references would enable someone of average skill in the relevant arts to recreate and practice a method of and system for evaluating cash flow and elements of a business enterprise as claimed.

I further declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment or both under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patents issuing thereon.

Signed,

/Rick M. Rauenzahn/



Rick Rauenzahn

Date: September 4, 2006

Art Unit: 3628

1355-59. This requirement is as much rooted in the Administrative Procedure Act, which ensures due process and non-arbitrary decisionmaking, as it is in § 103. See id. at 1344-45." In re Kahn, Slip Op. 04-1616, page 9 (Fed. Cir. Mar. 22, 2006)." (**Bolded added**).

In this case, the examiner made a judgement that the ordinary practitioner of the art, had he or she seen the Sandretto and Jost references at the time of Applicant's invention, would have seen the teachings, suggestions and obviousness of selectively using the disclosures of the two references in order to develop the features and limitations of claims 52, 63 and 76. Sandretto and Jost both present computer automated applications. Modifying the software and even the hardware employed to operate Sandretto's disclosure with additional software and perhaps additional hardware to add the neural networks teaching by Jost is eminently doable in the computer arts. The practitioner would have had the knowledge and skill to achieve the combinations through employment of appropriate hardware and software manipulations. The examiner's judgement is based on the judgement that the ordinary practitioner in this kind of invention is either solely competent in finance and strategic evaluations of the firm and is sufficiently knowledgeable to get the computer implementation done, or is sufficiently competent in working with one or more collaborating practitioners, assistants or a vendor who have the required computer related knowledge and skills. The details of these computer techniques are outside the scope of this examination and are not claimed. The rational underpinning for this judgement is based on the fact that computer systems hardware and software are extremely flexible, unlike many scientific and technical areas of art where that is not the case. For example, an invention employing a gasket with certain required stiffness characteristics to achieve a certain performance quality cannot have prior art applied to it based on a flexible gasket. Many court opinions are based on such specific factual scenarios where the technical facts may have been misunderstood by an examiner. The examiner is not required to give a technical exposition of how the ordinary practitioner would apply his technical know-how regarding computer systems, since this has been classified as a business methods application. Rather, the burden of proof falls on applicant to present a reasonable case to disprove the examiner's judgement. This requirement is supported by the following

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement filed September 10, 2006 fails to comply with the provisions of 37 CFR 1.97, 1.98 and MPEP § 609, particularly 1.98 (a)(3)(i) because a concise explanation of the relevance of the items submitted, including the identification of the relevant pages and lines of each IDS document, has not been submitted. The disclosed materials have been placed in the application file, but the information referred to therein has not been considered as to the merits. Applicant is advised that the date of any re-submission of any item of information contained in this information disclosure statement or the submission of any missing element(s) will be the date of submission for purposes of determining compliance with the requirements based on the time of filing the statement, including all certification requirements for statements under 37 CFR 1.97(e). See MPEP § 609.05(a).

Declaration Submitted Under Rule 132

2. The declaration by Mr. Rick Rauenzahn submitted on September 8, 2006 under Rule 132 has been considered but has been determined to lack relevance because the qualifications submitted by Mr. Rauenzahn do not qualify him as an expert according in the art of financial modeling as required by Rule 132 since Mr. Rauenzahn does not claim to have expertise in any aspect of business and/or financial modeling and because Mr. Rauenzahn's declaration does not make any statements regarding claimed subject matter and/or claimed limitations. Mr. Rauenzahn has claims degrees in chemical engineering at the BS, Masters and PhD levels. Mr. Rauenzahn specifically claims to have experience and expertise in the disciplines of fluid dynamics, turbulence modeling, numerical methods for partial differential equations, radiation hydrodynamics, and strength of materials as an employee of Los Alamos National Laboratory and Molten Metal Technologies for 23 years.

Response to Arguments

21. Applicant's arguments filed on September 8, 2006 with respect to claims 43-46, 48-52, and 54-86 in regard to the rejections under 35 USC 103(a) have been considered but are moot in view of the new ground(s) of rejection necessitated by Applicant's amendments of claims.

Applicant's arguments filed on September 8, 2006 with respect to claims 43-46, 48-52, and 54-86 in regard to the rejections under 35 USC 112 have been fully considered but they are not persuasive.

ARGUMENT A: Traversal of the rejections of claims 43-86 under 35 USC 101 (p. 20, l. 1 – p. 21, l. 24).

RESPONSE: The examiner has expanded the text of the 101 rejections above in response to Applicant's traversal of the rejections under 35 USC 101.

ARGUMENT B: Traversal of 35 CFR 112-1st and 2nd paragraph rejections (p. 22, l. 1 – p. 25, l. 2).

RESPONSE: The examiner has expanded the text of the 101 rejections above in response to Applicant's traversal of the rejections under 35 USC 101.

ARGUMENT C: Request for Affidavits under 37 CFR 1.104 (p. 27, l. 1 – p. 28, end) regarding the well known use of relational databases, a network schema and a data dictionary.

RESPONSE: Evidence for the well known nature of relational databases, a network schema and a data dictionary to the ordinary practitioner of the art at the time of Applicant's invention are contained in the Microsoft Computer Dictionary for relational databases and a data dictionary. Bunte et al. disclose the use of network schema in US Patent 5,873,070 (Col. 3, ll. 52, 58; Col. 6, ll. 33, 65).

Conclusion

9. **Claim 85** recites the limitations "business event network models". There is insufficient antecedent basis for this limitation in these claims because business event network models are not found in the disclosure.

10. **Claims 43, 54, 67 and 80** are rejected under 35 U.S.C. 112, second paragraph, because they would require undue experimentation for the ordinary practitioner to put to productive, reliable use, tangible and concrete use based on the guidelines for undue experimentation in MPEP 2164.01(a) because they would be beyond the level of one of ordinary skill to successfully use to produce concrete, reliable results which could be replicated, because the art claimed in the disclosure has poor predictability, the invention would require an undue amount of direction by the inventor, because working samples of a concrete input and concrete output are lacking, and the quantity of experimentation needed to make or use the invention based on the content of the disclosure is excessive because it is indeterminable. This meets the test laid out in *In Re Wands*: " A conclusion of lack of enablement means that, based on the evidence regarding each of the above factors, the specification, at the time the application was filed, would not have taught one skilled in the art how to make and/or use the full scope of the claimed invention without undue experimentation. *In re Wright*, 999 F.2d 1557, 1562, 27 USPQ2d 1510, 1513 (Fed. Cir. 1993)."

11. **Claims 52, 65, 78 and 85** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The expressions "intelligent", "direct effects" and "indirect effects" in claim 85 appear have been added by amendment after the first Office Action. The expression "business event network models" has been added by amendment to claims 52, 65 and 78 in the most recent response. None of these terms appear in the disclosure. Therefore there is insufficient antecedent basis for these limitations in these claims.

12. **Claims 43, 54, 67** each recite the limitation "where each network model from a plurality of network models supports the development of a controlling forecast for use in optimizing purchasing". There is insufficient antecedent basis for this limitation in the

BP NEURAL NETWORK OPTIMIZATION BASED ON AN IMPROVED GENETIC ALGORITHM

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Abstract:

An improved Genetic Algorithm based on Evolutionarily Stable Strategy is proposed to optimize the initial weights of BP network in this paper. The improvement of GA lies in the introducing of a new mutation operator under control of a stable factor, which is found to be a very simple and effective searching operator. The experimental results in BP neural network optimization show that this algorithm can effectively avoid BP network converging to local optimum. It is found by comparison that the improved genetic algorithm can almost avoid the trap of local optimum and effectively improve the convergent speed.

Keywords:

Evolutionarily stable strategy; Genetic algorithm; Neural network; Back propagation (BP) algorithm; Premature convergence

1 Introduction

In recent years, there have been many attempts in designing artificial neural networks automatically, in which the combination of evolutionary algorithms and neural networks has attracted a great deal of attention and one kind of evolutionary artificial neural network has been formed. Evolving neural networks by genetic algorithm were researched earliest of all.

The efficiency of GA has great influences on BP neural network (BPNN) optimization. During application of GA, however, there often exists a problem of premature convergence and stagnation^[1]. Whitley think that selective pressure and selection noise are the main factors of affecting population diversity^[2]. Higher selective pressure often leads to the loss of diversity in the population, which causes premature convergence at the same time of improving convergent speed. Therefore, keeping the balance between population diversity and convergent speed is very important to the performance of GA.

In recent years, many diversity preservation methods have been developed to avoid premature convergence to a local optimum. These can be divided into the following three subclasses:

1)Schemes of alleviating selective pressure to keep the biologic diversity, such as the modification of selection operator^[3-5] and scale-transformation of fit

function^[6]. Unfortunately, these methods often cause another problem of slow rate of convergence or stagnation in searching global optimum at the same time of improving population diversity.

2)Non-static mutation rate control schemes including dynamic^[7-10], adaptive or self-adaptive^[10-12] mechanism to control the rate of mutation. The mutation operator is a main operator to keep the biologic diversity, especially in real-coded GA, because it introduces new search space and maintain the genetic diversity of a population, whereas the crossover operator only operates in the known search space. From this point of view, high mutation rate is good for searching the global solution. But too high mutation rate will result in blind stochastic search. It has been proved that deterministically varying mutation rates during the search have a better performance compared to the fixed mutation rate schemes. Unfortunately, there are some drawbacks in non-static mutation rate control schemes. The dynamic parameter control scheme requires for the user to devise a schedule specifying the rate at which the parameter is typically decreased. The self-adaptive scheme does not need such a specific schedule. Unfortunately it is rather complicated to explain to novice users, and as a result they usually prefer the simple fixed mutation rate scheme.

3)Spatial separation schemes^[13-14]. One of the most important representatives is the distributed GA's (DGA's). Their premise lies in partitioning the population into several subpopulations, each one of them being processed by a GA independently of the others. Furthermore, a migration mechanism produces a chromosome exchange between the subpopulations. In this way, a distributed search and an effective local tuning may be obtained simultaneously. They are suitable for producing multi-resolution in search space but run risk of running too much CPU time.

A genetic algorithm based on evolutionarily stable strategy (ESSGA) is proposed in this paper to try to pursue better balance between population diversity and convergent speed by means of introducing a new kind of mutation operator under the control of a stable factor. Different from other mutation rate control schemes, this mutation operator only acts on some of the preponderant individuals under the control of a stable factor, which keeps the ratio of quantity

REMARKS

The Assignee would like to thank the Examiner for the courtesy extended to Jeff Oster during his recent visit to Washington D.C..

It is our understanding that concern was expressed about the use of the word "relationship" in claim 43 during the interview. The Assignee has provided an excerpt from a network definition that shows the use of the word relationship in claim 43 is consistent with a formal definition of a network.

More formally, a network contains a set of objects (in mathematical terms, nodes) and a mapping or description of relations between the objects or nodes. The simplest network contains two objects, 1 and 2, and one relationship that links them. Nodes 1 and 2, for example, might be people, and the relationship that links them might be "are standing in the same room."

This definition of a network is well known to those of average skill in the arts of artificial intelligence (class 706), business methods (class 705) and data processing (class 707) that are contained in the above referenced application and other cross referenced applications.

Reservation of rights

The Assignee hereby explicitly reserves the right to present the previously modified and/or canceled claims for re-examination in their original format. The cancellation or modification of pending claims to put the instant application in a final form for allowance and issue is not to be construed as a surrender of subject matters covered by the original claims before their cancellation or modification.

Conclusion

The pending claims are of a form and scope for allowance. Prompt notification thereof is respectfully requested.

Respectfully submitted,

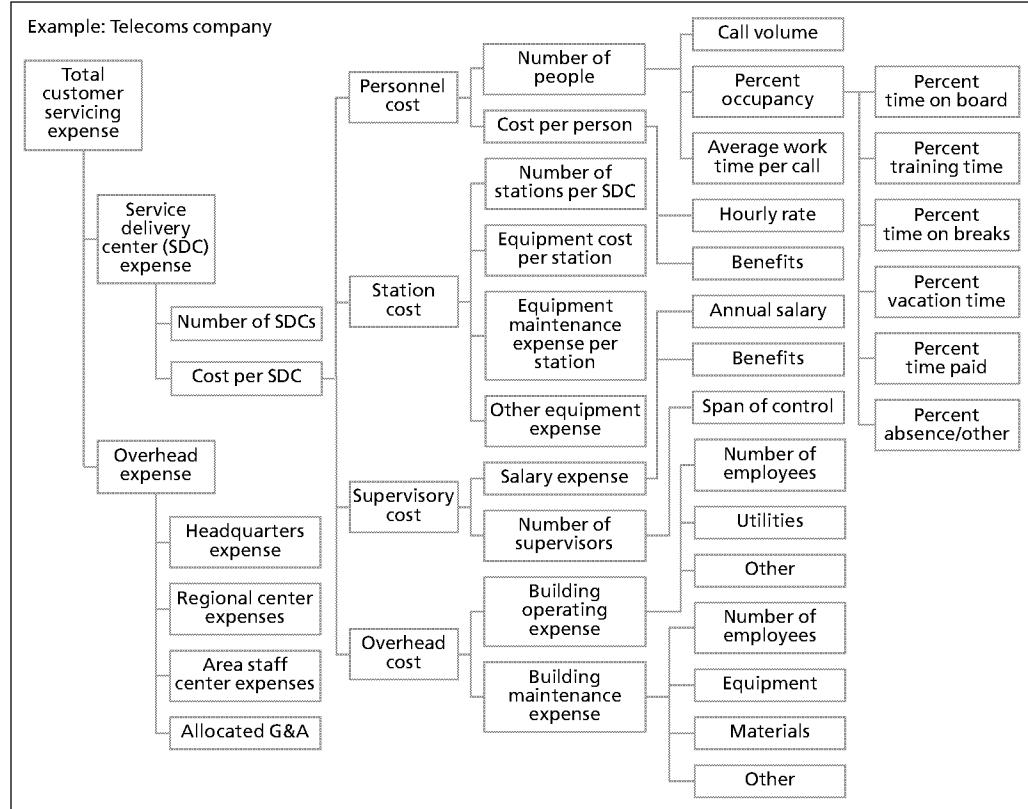


B.J. Bennett, President Asset Trust, Inc.
Date: January 31, 2006

WHAT IS VALUE-BASED MANAGEMENT?

Exhibit 4

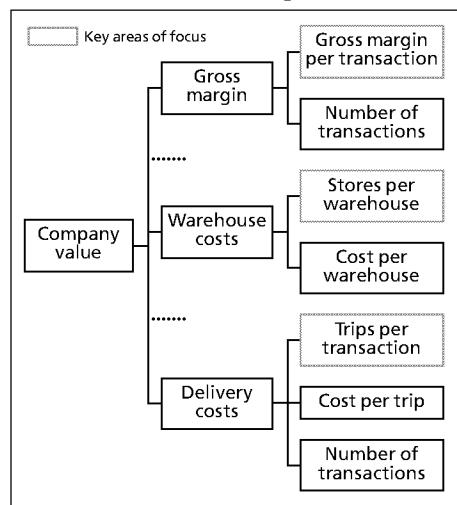
Value drivers in customer servicing



What is important is that these key value drivers, although only a small part of the total business system, have a significant impact on value, are measurable from month to month, and are clearly under the control of line management.

Exhibit 5

Value drivers for a hard goods retailer



To see how the numbers might work, consider the list of value drivers for a hard goods retailer shown in Exhibit 5. The value of the company derives partly from gross margin, warehouse costs, and delivery costs. Gross margin, in turn, is determined by gross margin per transaction and the number of transactions (which can be themselves further disaggregated if necessary). Warehouse costs are a function of the number of retail stores per warehouse and the cost per warehouse. Finally, delivery costs are determined by the number of trips per transaction, the cost per trip, and the number of transactions.

Network element	U.S. Patent 6,249,768
Data Collection	Within the SCN framework <u>we expect to integrate the beliefs, expert opinions</u> , and measurable data in a way that aids the formulation and analysis of a firm's strategy (see Tulskie Column 21, Line 67 through Column 22, Line 2)
Network structure: 1 st layer nodes and 2 nd layer nodes	First layer nodes are resources, second layer nodes are capabilities, "from a given core capability, <u>the modeler needs to identify the capabilities directly supported by it</u> . Support may be either positive (enhancing) or negative (conflicting). Then for each of these capabilities, the same process has to be repeated. As discussed above, <u>a capability identified in a previous step may need to be split into multiple capabilities when it turns out that there are multiple types of outcomes from that capability...</u> This process continues until the tangible firm assets and resources are identified and linked to the capabilities they support (see Tulskie, Column 20, Line 53 – C21, L 1)
Network structure: 3 rd layer nodes	Value propositions 101 appear at the top level. These are the major groupings of value that the firm offers. As a group, they may represent a unique offering to the market. General examples are: low cost, high quality, and customer convenience. (see Tulskie, Column 12, Line 11 through Line 14)
Network structure: Node connection weights – layer 1 to layer 2 and Node connection weights – layer 2 to layer 3	Relationships as depicted within this framework <u>are not necessarily completely deterministic or even necessarily observable</u> . They encompass all cause and effect linkages that are observable and all cause and effect linkages <u>that a management team believes to exist</u> . (see Tulskie, Column 21 Line 46 through Line 51)
Learning parameters	In some areas, these attributes are objectively observable or measurable. <u>In other cases, we must rely on more subjective individual or collective experience.</u> (see Tulskie, Column 9, Line 9 through Line 15)

11. Related Proceedings Appendix

Attached opinion appears to be based largely on an assumption that VBM is different than SVA in a number of areas where they are in fact the same (see page 76, Evidence Appendix). Opinion also appears to contain a number of clear errors because:

- 1) The cited documents failed to make the invention as a whole obvious by teaching away from the claimed methods. Bielinski teaches: efficient market in place of an inefficient market, a tree based analysis in place of a network analysis and three determinants of market value (cash flow, cash flow risk and growth) in place of the elements of value as determinants of value. Brown teaches: scoring in place of regression and that 40 external factors determine market value in place of elements of value as determinants of value.
- 2) The cited combination failed to teach one or more limitation for every claim.
- 3) Modifying the cited documents to replicate the claimed functionality would require changes in the principles of operation for the cited inventions and destroy their ability to function. Bielinski would have to change from a tree to a network and it is well known that substituting a neural network sigmoid in place of the tree node would destroy the ability of the tree to function. Brown would have to change to using elements of value as determinants of value and use regression in place of scoring.
- 4) The cited documents teach away from their own combination. Bielinski specifically prohibits the use of projections while the cited portion of Brown teaches a method with only one function: projecting changes in stock prices.
- 5) Bielinski specifically states that the disclosed VBM method follows the principles of Shareholder Value Analysis (SVA). One of the well known principles of SVA is the efficient market theory. In spite of these facts, the BPAI said there was no evidence that Bielinski taught the efficient market theory.
- 6) Bielinski specifically states that the disclosed VBM method follows the principles of SVA. One of the well known principles of SVA is the tree based analysis of cash flow. In spite of these facts, the BPAI said there was no evidence that Bielinski taught the tree based analysis of cash flow.
- 7) Bielinski specifically states that the disclosed VBM method follows the principles of SVA. One of the well known principles of SVA is that there are 3 determinants of market value. In spite of these facts, the BPAI said there was no evidence that Bielinski taught that there were 3 determinants of market value.

1 UNITED STATES PATENT AND TRADEMARK OFFICE

2
3
4 BEFORE THE BOARD OF PATENT APPEALS
5 AND INTERFERENCES

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7
8 *Ex parte* JEFFREY SCOTT EDER

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11 Appeal 2007-2745
12 Application 09/761,671
13 Technology Center 3600

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16 Decided: August 29, 2007

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18
19 Before TERRY J. OWENS, HUBERT C. LORIN, and ANTON W. FETTING,
20 *Administrative Patent Judges.*

21 FETTING, *Administrative Patent Judge.*

22 DECISION ON APPEAL

23
24
25
26 STATEMENT OF CASE

27 Jeffrey Scott Eder (Appellant) seeks review under 35 U.S.C. § 134 of a Final
28 rejection of claims 69-103, the only claims pending in the application on appeal.

29 We have jurisdiction over the appeal pursuant to 35 U.S.C. § 6.

30
31 We AFFIRM.

1 The Appellant invented a way to calculate and display a forecast of the impact
2 of user-specified or system generated changes in business value drivers on the
3 other value drivers, the elements, the components, the financial performance and
4 the long term value of a commercial enterprise that utilizes the information from a
5 detailed valuation of the enterprise (Specification 9:2-7).

6 An understanding of the invention can be derived from a reading of exemplary
7 claim 69, which is reproduced below [bracketed matter and some paragraphing
8 added].

9 69. A current operation modeling method, comprising:

10 [1]

11 [a] integrating transaction data

12 [i] for a commercial enterprise

13 [ii] in accordance with a common data dictionary;

14 [b] using a neural network model

15 [i] to identify one or more value driver candidates

16 [ii] for each of one or more elements of value from said data,

17 [c] using an induction model

18 [i] to identify one or more value drivers from said candidates
19 and

20 [ii] define a contribution summary

21 [1] for each element of value

22 [2] for each of one or more aspects of a current operation
23 financial performance

24 [3] using said value drivers, and

25 [d] creating a plurality of network models

26 [i] that connect the elements of value

27 [ii] to aspects of current operation financial performance

1 [iii] using said contribution summaries

2 [2]

3 [a] where the elements of value are selected from the group consisting
4 of

5 [i] brands,

6 [ii] customers,

7 [iii] employees,

8 [iv] intellectual capital,

9 [v] partners,

10 [vi] vendors,

11 [vii] vendor relationships and

12 [viii] combinations thereof,

13 [b] where the induction models are selected from the group consisting
14 of

15 [i] lagrange,

16 [ii] path analysis and

17 [iii] entropy minimization,

18 [c] where the network models support automated analysis through
19 computational techniques and

20 [d] where the aspects of current operation financial performance are
21 selected from the group consisting of

22 [i] revenue,

23 [ii] expense,

24 [iii] capital change,

25 [iv] cash flow,

26 [v] future value,

27 [vi] value and

28 [vii] combinations thereof.

1

2 This appeal arises from the Examiner's Final Rejection, mailed June 13, 2006.
3 The Appellant filed an Appeal Brief in support of the appeal on October 3, 2006.
4 An Examiner's Answer to the Appeal Brief was mailed on January 9, 2007. A
5 Reply Brief was filed on January 27, 2007.

6

PRIOR ART

1

The Examiner relies upon the following prior art:

8 Daniel W. Bielinski, *How to sort out the premium drivers of post-deal value*,
9 Mergers and Acquisitions, Jul/Aug 1993, Vol. 28, Iss. 1, pg. 33, 5 pgs. (Bielinski)

10 Carol E. Brown, James Coakley, and Mary Ellen Phillips, *Neural networks enter*
11 *the world of management accounting*, Management Accounting, May 1995, Vol.
12 76, Iss. 11, p. 51, 5 pgs. (Brown)

13

The Appellant relies upon the following prior art, already of record:

¹⁴ Alfred Rappaport, *Creating Shareholder Value*, A Guide for Managers and
¹⁵ Investors, pp. 39, 70, 171, and 172, ISBN 0-684-84410-9, 1998 (Rappaport)

1

REJECTION

17 Claims 69-103 stand rejected under 35 U.S.C. § 103(a) as unpatentable over
18 Bielinski and Brown.

10

ISSUES

20 Thus, the issue pertinent to this appeal is whether the Appellant has sustained
21 its burden of showing that the Examiner erred in rejecting claims 69-103 under
22 35 U.S.C. § 103(a) as unpatentable over Bielinski and Brown.

1 FACTS PERTINENT TO THE ISSUES

2 The following enumerated Findings of Fact (FF) are believed to be supported
3 by a preponderance of the evidence.

4 *Claim Construction*

- 5 01. Entropy minimization is an induction algorithm that, starting with
6 nothing, adds variable to composite variable formula as long as they
7 increase the explainability [sic] of result (Specification, 47:Table 23).
- 8 02. LaGrange is an induction algorithm that is designed to identify the
9 behavior of dynamic systems and uses linear regression of the time
10 derivatives of the system variables (Specification, 47:Table 23).
- 11 03. Path Analysis is an induction algorithm that is essentially equivalent
12 to multiple linear regression that finds the least squares rule for more
13 than one predictor variable (Specification, 47:Table 23).

14 *Bielinski*

- 15 04. Bielinski is directed towards describing how Value Based
16 Management (VBM), an advancement in discounted cash flow
17 modeling, centers on what specific steps can be taken operationally and
18 strategically to add value to a target organization (Bielinski, 1:Abstract).
- 19 05. Bielinski describes how sensitivity analysis of past results offers clues
20 to what can be done in the future and which value drivers should receive
21 the most attention to achieve optimal rewards. The VBM technique
22 allows the analyst to figure key decision making trade-offs, since
23 attention to one driver may generate negative effects on others or 2 or

1 more drivers may have to be varied in concert to produce the best results
2 (Bielinski, 1:Abstract).

3 06. Bielinski describes Value-Based Management (VBM), which keys on
4 a target's historical operations rather than future projections. VBM also
5 can calculate the results of trade-offs when decision makers must choose
6 between a series of factors that can be changed to enhance post
7 acquisition value (Bielinski, 1:Bottom ¶ - 2:Top line).

8 07. Bielinski describes the best-known valuation tool designed to
9 facilitate value creation and cash flow enhancement as Shareholder
10 Value Analysis (SVA), introduced in the 1980s by Prof. Alfred
11 Rappaport of Northwestern University (Bielinski, 2:First full ¶).

12 08. SVA may be defined as a two-step process. First, a discounted cash
13 flow business valuation is performed. A projection of future cash flow
14 (including a residual) is developed and discounted at an appropriate rate,
15 usually the cost of capital, to arrive at an indicated value. Second, key
16 factors (or value drivers), such as growth, profit margins, etc., are varied
17 systematically to test the sensitivity of the indicated business value to
18 each driver. Standard SVA sensitivity analysis changes each value driver
19 plus or minus 1%, although analysts now often use "relevant ranges" and
20 different percentages for upside and downside swings to reflect
21 prevailing business realities (Bielinski, 2:First full ¶).

22 09. SVA has limitations often magnified into constraints that necessitate
23 modifying standard SVA analysis. Thus, Rappaport describes and
24 distinguishes VBM, a first cousin to SVA, which has resulted from these
25 modifications. Bielinski provides an abbreviated overview of VBM and

describes how it differs from the traditional SVA framework (Bielinski,
2:Second and third full ¶'s).

10. Rather than use projections of future cash flow like SVA, the VBM
framework utilizes historical cash flow. Five years of historical cash
flow are added up to arrive at a cumulative baseline cash flow number.
That is in contrast to SVA's method of discounting future cash flows to
reach an indicated value. Instead of testing the sensitivity of a value
based on a projection, VBM tests the sensitivity of the historical cash
flow. VBM tells the executive how much more or less cash flow would
be in the bank today if certain events had occurred differently or if the
company had operated differently in the past five years (Bielinski,
2:Fifth and sixth full ¶'s).

11. The use of actual historical data, rather than projections, has proven
useful in testing the impact of alternative scenarios against the reality of
actual events. It also has served as a catalyst to identify and implement
actions that generate improvements. As long as a company's
fundamental structure does not change going forward, the results provide
meaningful insight regarding the probable outcomes of future strategic
action, to the extent that risk is not increased, an executive may
reasonably assume that an increase from historical cash flow trends
likely would translate into enhanced value (Bielinski, 2:Seventh full ¶).

12. VBM utilizes drivers that are more directly linked to operations. For
example, rather than use operating profit margin as a broad value driver,
a VBM analysis on a manufacturer would include a breakdown of cost
of goods sold by key components (Bielinski, 2:Eighth full ¶).

- 1 13. Bielinski provides an example of a mix for VRM analysis including
- 2 materials, human resources, technology and capital, and other costs of
- 3 goods sold as value drivers (Bielinski, 2:Bottom five full ¶'s).
- 4 14. VBM essentially utilizes SVA principles but advances the basic
- 5 techniques by incorporating historical data, operations-linked value
- 6 drivers, and concurrent changes in multiple value-drivers (Bielinski,
- 7 3:Third full ¶).
- 8 15. Bielinski shows the sensitivity of the baseline cash flow to changes in
- 9 key factors. Showing how results might have turned out differently if
- 10 operating or strategic changes been effected in the recent past suggests
- 11 improvements that can be made in the future (Bielinski, 3:Sixth full ¶).
- 12 16. Sensitivity analysis can show how changes in key cost and operating
- 13 components can impact cash flow. One striking conclusion is that the
- 14 areas where the big dollars are do not always offer the greatest
- 15 opportunities to improve cash flow and value (Bielinski, 3:Seventh and
- 16 eighth full ¶).
- 17 17. Bielinski describes how SVA can tie strategic changes directly to
- 18 manufacturing by future initiatives to control costs, eliminating
- 19 overspecification and establishing better value chain management
- 20 (Bielinski, 3:Bottom ¶).
- 21 18. And if both the acquirer and target utilize VBM in constructing a
- 22 projection, the two sides might come close to reaching a consensus on
- 23 what constitutes a "realistic" projection of future performance (Bielinski,
- 24 4:Bottom ¶).

1 19. With VBM, sensitivity analysis of past results offers clues to what can
2 be done in the future and which value drives - e.g., sales growth, profit
3 margins, productivity, etc. - should receive the most attention to achieve
4 the optimal rewards. Additionally, the VBM technique allows the analyst
5 to figure key decision making trade-offs, since attention to one driver
6 may generate negative effects on others or two or more drivers may have
7 to be varied in concert to produce the best results (Bielinski, 5:Keys to
8 creating value).

9 *Brown*

10 20. Brown is an accounting journal article describing how artificial
11 intelligence (AI) is implemented in business practices. Three of the most
12 common methods parallel the way people reason: rules (inference
13 procedures), cases (case-based reasoning), and pattern matching (neural
14 networks). These methods may be used separately or in combination and
15 currently are being used to solve a variety of business tasks (Brown
16 51:Left col., Bottom ¶ - Center col.).

17 21. Neural networks use pattern matching. The financial services industry
18 with its large databases has fielded several successful neural network
19 applications, and neural networks based on information about customers
20 or potential customers have proved effective. If large databases exist
21 with which to train a neural network, then use of that technology should
22 be considered. For a neural network the large database can be used as the
23 equivalent of the human expert (Brown 52:Center col., Second ¶).

- 1 22. Neural networks are used for forecasting future sales and prices,
2 estimating future costs, and planning future schedules and expenditures
3 (Brown 53:Left col., Forecasting and Scheduling).
- 4 23. An air carrier's improved scheduling makes aircraft operations more
5 predictable, reduces delays, and reduces fuel costs by shortening the
6 time aircraft spend waiting for available gates. More efficient scheduling
7 raises the number of flights by each aircraft, increases revenue, provides
8 better management of disruptions, and improves passenger service
9 (Brown 53:Left col.-middle col., Forecasting and Scheduling).
- 10 24. A provider of hospital supplies, uses a neural network to identify the
11 key characteristics of the best customers and searches the inactive
12 customer list for the highest probability purchasers from those who are
13 inactive. Neural networks also help with customer service and support
14 (Brown 53:Center col., First full ¶).
- 15 25. As businesses reorganize based on customer needs, neural networks
16 can help them analyze past business transactions so they can understand
17 their customers' buying patterns. One neural network for database
18 mining has been tailored for database marketing (Brown 53:Center col.,
19 Second full ¶).
- 20 26. Many systems also have been developed to help investors and
21 investment companies manage investments in securities. One company
22 has a neural network it uses as a decision aid in stock purchases for
23 mutual funds. The neural network makes a very accurate forecast about
24 10% of the time; the other 90% of the time it makes no forecast at all.
25 Another company uses a neural network to manage the \$100 million

1 equity portfolio of its pension fund. Forty indicators are used to rank the
2 expected future returns of 1,000 equities. Currently owned stocks are
3 sold and are replaced by those with future return rating over a certain
4 cutoff, which results in an 80% monthly turnover. The portfolio return,
5 net of transaction costs, exceeds that of the Standard & Poor's 500 index.
6 Other firms use neural network to predict the S & P 500 index and the
7 performance of stocks and bonds to help market traders in making their
8 buy, hold, and sell decisions. The system recognizes patterns in market
9 activity before they are apparent to a human, which may mean millions
10 in trading profits (Brown 56:Center col., Investments).

11 *Rappaport*

- 12 27. Rappaport describes techniques for creating shareholder value
13 (Rappaport Title).
- 14 28. A component of the cost of equity is a risk premium. One way of
15 estimating the risk premium for a particular stock is by computing the
16 product of the market risk premium for equity (the excess of the
17 expected rate of return on a representative market index such as the
18 Standard & Poor's 500 stock index over the risk-free rate) and the
19 individual security's systematic risk, as measured by its beta coefficient
20 (Rappaport 39:Middle full ¶).
- 21 29. Rappaport teaches that three factors determine stock prices: cash
22 flows, a long-term forecast of these cash flows, and the cost of capital or
23 discount rate that reflects the relative risk of a company's cash flows.
24 The present value of a company's future cash flows, not its quarterly
25 earnings, determines its stock price (Rappaport 70:Last full ¶).

- 1 30. Rappaport teaches that business value depends on seven financial
2 value drivers: sales growth, operating profit margin, incremental fixed
3 capital investment, incremental working capital investment, cash tax
4 rate, cost of capital, and value growth duration. While these drivers are
5 critical in determining the value of any business, they are too broad to be
6 useful for many operating decisions. To be useful, operating managers
7 must establish for each business the micro value drivers that influence
8 the seven financial or macro value drivers.
- 9 31. Rappaport teaches that an assessment of these micro value drivers at
10 the business unit level allows management to focus on those activities
11 that maximize value and to eliminate costly investment of resources in
12 activities that provide marginal or no potential for creating value. Value
13 driver analysis is a critical step in the search for strategic initiatives with
14 the highest value-creation leverage. Isolating these key micro value
15 drivers enables management to target business unit operations that have
16 the most significant value impact and those most easily controlled by
17 management.
- 18 32. Rappaport teaches that the first step of a value driver analysis is to
19 develop a value driver "map" of the business. This involves identifying
20 the micro value drivers that impact sales growth, operating profit
21 margins, and investment requirements. Armed with a better
22 understanding of micro value driver relationships, the next step is to
23 identify the drivers that have the greatest impact on value.
- 24 33. Rappaport provides an illustrative table (Rappaport 172:Figure 9-3.
25 Micro and Macro Value Drivers) that presents the sensitivity of

1 shareholder value to changes in selected drivers for retail as well as
2 industrial marketing (Rappaport 172:Top ¶).

3 34. Rappaport teaches that most managers believe they can identify the
4 key drivers for their business. However, these drivers may in many cases
5 be appropriate for a short-term-earnings-driven business rather than an
6 organization searching for long-term value, Experience shows that value
7 driver sensitivities are not always obvious. Therefore, quantifying
8 sensitivities is a valuable exercise for both operating and senior
9 management (Rappaport 172:First full ¶).

10 PRINCIPLES OF LAW

11 *Claim Construction*

12 During examination of a patent application, pending claims are given
13 their broadest reasonable construction consistent with the specification. *In*
14 *re Prater*, 415 F.2d 1393, 1404-05, 162 USPQ 541, 550 (CCPA 1969); *In*
15 *re Am. Acad. of Sci. Tech Ctr.*, 367 F.3d 1359, 1364, (Fed. Cir. 2004).

16 Although a patent applicant is entitled to be his or her own lexicographer of
17 patent claim terms, in *ex parte* prosecution it must be within limits. *In re Corr*,
18 347 F.2d 578, 580, 146 USPQ 69, 70 (CCPA 1965). The applicant must do so by
19 placing such definitions in the Specification with sufficient clarity to provide a
20 person of ordinary skill in the art with clear and precise notice of the meaning that
21 is to be construed. *See also In re Paulsen*, 30 F.3d 1475, 1480, 31 USPQ2d 1671,
22 1674 (Fed. Cir. 1994) (although an inventor is free to define the specific terms
23 used to describe the invention, this must be done with reasonable clarity,
24 deliberateness, and precision; where an inventor chooses to give terms uncommon
25 meanings, the inventor must set out any uncommon definition in some manner

1 within the patent disclosure so as to give one of ordinary skill in the art notice of
2 the change).

3 *Obviousness*

4 A claimed invention is unpatentable if the differences between it and the
5 prior art are “such that the subject matter as a whole would have been obvious at
6 the time the invention was made to a person having ordinary skill in the art.” 35
7 U.S.C. § 103(a) (2000); *KSR Int'l v. Teleflex Inc.*, 127 S.Ct. 1727, 1734, 82
8 USPQ2d 1385, 1391 (2007); *Graham v. John Deere Co.*, 383 U.S. 1, 13-14, 148
9 USPQ 459, 466 (1966).

10 In *Graham*, the Court held that that the obviousness analysis is bottomed on
11 several basic factual inquiries: “[1] the scope and content of the prior art are to be
12 determined; [(2)] differences between the prior art and the claims at issue are to be
13 ascertained; and [(3)] the level of ordinary skill in the pertinent art resolved.” 383
14 U.S. at 17, 148 USPQ at 467. See also *KSR Int'l v. Teleflex Inc.*, 127 S.Ct. at
15 1734, 82 USPQ2d at 1391. “The combination of familiar elements according to
16 known methods is likely to be obvious when it does no more than yield predictable
17 results.” *Id.* 127 S.Ct. at 1739, 82 USPQ2d at 1395.

18 “When a work is available in one field of endeavor, design incentives and
19 other market forces can prompt variations of it, either in the same field or in a
20 different one. If a person of ordinary skill in the art can implement a predictable
21 variation, § 103 likely bars its patentability.” *Id.* 127 S. Ct. at 1740, USPQ2d at
22 1396.

23 “For the same reason, if a technique has been used to improve one device,
24 and a person of ordinary skill in the art would recognize that it would improve

1 similar devices in the same way, using the technique is obvious unless its actual
2 application is beyond his or her skill.” *Id.*

3 “Under the correct analysis, any need or problem known in the field of
4 endeavor at the time of invention and addressed by the patent can provide a reason
5 for combining the elements in the manner claimed.” 127 S. Ct. at 1742, USPQ2d at
6 1397.

7 ANALYSIS

8 *Claims 69-103 rejected under 35 U.S.C. § 103(a) as unpatentable over Bielinski
9 and Brown.*

10 The Appellant argues these claims as a group. Although the Appellant
11 nominally contends each of the independent claims individually, each of the
12 contentions for the remaining independent claims refers back to the arguments for
13 claim 69.

14 Accordingly, we select claim 69 as representative of the group.
15 37 C.F.R. § 41.37(c)(1)(vii) (2006).

16 We initially construe claim 69. We find that claim 69 is divided into two parts,
17 [1] and [2]. Part [1] recites the method steps, which, overall perform element [1.a]
18 integrating data, by step [1.b] using a neural network model to identify a fist set of
19 candidates, from which step [1.c] further identifies a set of drivers, and defines a
20 set of contribution summaries, finally, in step [1.d] creating network models with
21 the summaries. Thus, claim 69 contains three steps, [1.b-d] that are employed
22 within step [1.a]. Steps [1.b-d] are necessarily sequential because each of [1.c] and
23 [1.d] requires output from the preceding step. Part [2] identifies components used

1 in the steps in part [1], and thus limits the terms those components are used in
2 within part [1].

3 The Examiner found that Bielinski describes all of the elements of claim 69
4 except for the use of neural network models using the indicators and a portion of
5 the data to identify value driver candidates. To overcome this deficiency, the
6 Examiner found that Brown described valuation using neural networks and training
7 neural network models for aspects of financial performance using indicators. The
8 Examiner concluded that it would have been obvious to a person of ordinary skill
9 in the art to have combined Bielinski and Brown to take advantage of neural
10 networks to increase accuracy of models (Answer 3:Bottom ¶ - 4:Full page).

11 The Appellant contends that Bielinski¹ and Brown: (1) teach away from the
12 proposed combination; (2) would require a change in operating principle; (3) if
13 combined, would destroy the ability of one of the methods to function; (4) fails to
14 make the invention as a whole obvious; and (5) fails to meet any of the criteria for
15 establishing a *prima facie* case of obviousness (Br. 12:Third ¶).

16 *Teaching Away*

17 (1) The Appellant argues that Rappaport's description of only three market
18 value determinants, is incompatible with Brown's forty determinants (Br.
19 12:Bottom ¶).

¹ The Appellant relies on Rappaport to support many of its arguments regarding Bielinski, apparently treating Rappaport as having been incorporated by reference within Bielinski, based on Bielinski's described usage of Rappaport's Shareholder Value Analysis (Bielinski, 30:First full ¶). The Brief somewhat confusingly attributes text actually found in Rappaport to Bielinski. In this opinion, when we refer to Rappaport's text, based on either the Appellant's contentions, or on our own analysis and fact finding, we attribute that text to Rappaport.

1 We initially find that here, as throughout the arguments in the Brief, the
2 Appellant has somewhat rhetorically attributed the teachings of Rappaport, and in
3 particular certain assertions within Rappaport, to Bielinski as a device to discredit
4 the combination of Bielinski and Brown. While Bielinski refers to the teachings of
5 Rappaport, as we noted in footnote [1], this does not necessarily mean that
6 everything taught and asserted by Rappaport is necessarily embraced by
7 Bielinski's teachings. In particular, Bielinski distinguishes its VBM technique
8 from Rappaport's SVA technique (FF 09).

9 As to the merits of the Appellant's argument, although Rappaport describes
10 that three factors determine stock prices (FF 29), we find that Bielinski describes
11 several market value drivers and implies there are more (FF 19). Also, we find that
12 Bielinski describes drivers of varying scope (FF 12), such that the broadest drivers
13 taught by Rappaport can be broken down into more drivers more directly linked to
14 operations.

15 On the other hand, the forty indicators taught by Brown that the Appellant
16 contends are incompatible relate to portfolio analysis across multiple companies
17 (FF 26) rather than analysis of a single company as taught by Bielinski (FF 04). It
18 is hardly surprising and totally irrelevant that an application comparing multiple
19 companies might use more indicators than a single company.

20 The Appellant has not sustained its burden of showing the Examiner erred.

21 (2) The Appellant argues that Bielinski's teachings imply an efficient market,
22 which is incompatible with an inefficient market implied by Rappaport (Br. 13:Top
23 ¶).

24 The Appellant bases this argument again on Rappaport rather than Bielinski as
25 such, pointing to Rappaport's description of a market risk quantifier, beta (FF 28).

1 The Appellant contrasts this with Brown's use of neural networks to select
2 individual stocks in a portfolio (FF 26). Thus, the Appellant has, as in the previous
3 argument, assigned an SVA teaching by Rappaport to Bielinski that is not
4 necessarily applicable to Bielinski's VBA, and compared Bielinski's single
5 company analysis to Brown's example of portfolio analysis. More to the point, we
6 find there is nothing fundamentally incompatible between a measure of market risk
7 and portfolio selection as suggested by the Appellant, particularly since it is widely
8 known that the purpose of portfolios is to manage risk. None of the three
9 references make any connection between their teachings and either an efficient or
10 inefficient market hypothesis.

11 The Appellant has not sustained its burden of showing the Examiner erred.

12 (3) The Appellant argues that Bielinski's reliance on long term cash flow
13 analysis is incompatible with Brown's short term analysis, and that Bielinski
14 specifically teaches away from the use of projections for any aspect of analysis
15 (Br. 13:Second ¶).

16 We again find that the Appellant compared Bielinski's single company analysis
17 to Brown's example of portfolio analysis, as the short term analysis pointed to by
18 the Appellant (Brown 56:reference to 80% monthly turnover) is again within the
19 investment analysis examples of Brown.

20 We further find that the Appellant is conflating the two distinct operations
21 performed by Bielinski's VBM. In particular, Bielinski first tests the sensitivity of
22 long term historical cash flow to different operating assumptions about past
23 operations (FF 10). Then Bielinski applies the results of this sensitivity analysis to
24 future strategic action (FF 11). Contrary to the Appellant's contention, Bielinski
25 specifically teaches the use of projections in this phase of the analysis.

1 Bielinski does not characterize the time frame for analysis of future action, but
2 we find that such projected time frames typically include relatively short term time
3 frames because of the inherent uncertainty in projections that increases with time
4 frame. We further find that there is nothing in Bielinski that would suggest that the
5 time frame for the projection phase of the analysis is incompatible with a shorter
6 time frame.

7 The Appellant has not sustained its burden of showing the Examiner erred.

8 (4) The Appellant argues that Rappaport's use of a tree based model topology
9 is incompatible with Brown's network topology (Br. 13:Third ¶).

10 The Appellant has made a broad contention of the incompatibility of these
11 methods without a specific showing of the nature of their incompatibility. The
12 Appellant bases this argument again on Rappaport rather than Bielinski as such,
13 contending that Rappaport implicitly teaches a tree methodology. We find that
14 nothing in Rappaport specifically refers to a tree based model topology. Rappaport
15 presents a figure of a tree diagram to represent the hierarchical nature of
16 organizational costs and activities (FF 33), but makes no representation as to how
17 this is incorporated within the model.

18 Even if Bielinski's VBM were to employ a tree based methodology, we find
19 nothing inconsistent with employing a neural network within each of the branches
20 of the tree's analysis. Further, we find nothing incompatible with assigning neural
21 network analysis to Bielinski's phase of finding driver candidates as in claim 69
22 element [1.b.] and assigning a tree based induction model to identify drivers as in
23 element [1.c.]. The Appellant has not made any contention otherwise.

24 The Appellant has not sustained its burden of showing the Examiner erred.

1 (5) The Appellant argues that Bielinski's usage of sensitivity analysis is
2 incompatible with Brown's neural network scoring for the same data (Br.
3 13:Bottom ¶).

4 We again find that the Appellant compared Bielinski's single company analysis
5 to Brown's example of portfolio analysis, as the scoring pointed to by the
6 Appellant (Brown 56:reference to ranking of future returns of stocks) is again
7 within the investment analysis examples of Brown.

8 Further, Bielinski applies the results of its sensitivity analysis to future strategic
9 action (FF 11). Similarly, Brown applies its results to future strategic actions (FF
10 22). We find nothing incompatible between using the results of sensitivity
11 analysis, their implications for future actions, and the results of neural networks for
12 suggesting future actions.

13 The Appellant goes on to argue that Bielinski and Brown are measuring the
14 same thing and there would be no point in using two methodologies to measure the
15 same thing (Br. 13:Bottom ¶). We find this is not an argument of incompatibility,
16 but of so much compatibility as to be redundant. We further find that Bielinski and
17 Brown base their analysis on different inputs (Bielinski using cash flows and
18 Brown using large databases) and the use of different analytical methods to
19 converge on a common result to reduce uncertainty is widely known and applied.

20 The Appellant has not sustained its burden of showing the Examiner erred.

21 *Changing Principle of Operation*

22 The Appellant argues that Bielinski and Rappaport's Shareholder Value
23 Analysis (SVA) would change Brown's neural network because it would use a tree
24 based analysis, acknowledge that the efficient market theory does not explain all

1 value changes, and acknowledge that cash flow explains only a portion of the value
2 of an enterprise (Br. 14:Top ¶). The Appellant further argue that Bielinski's Value
3 Based Management (VBM) would change Brown's strict reliance on historical
4 cash flow and the related prohibition against using projections of any kind (Br.
5 14:Second ¶).

6 We find that these contentions are all repetitions of those made under the rubric
7 of teaching away, *supra*, but couched as changing principles of operation, and our
8 findings are the same. The Appellant has made no contention specifically
9 demonstrating that the combination of Bielinske and Brown would necessarily
10 change the principles of their operation, particularly since Brown's neural network
11 might be used in performance of element [1.b.] and Bielinski's VBM in
12 performance of [1.c.] of claim 69, thus not requiring any overlap of their operation.

13 The Appellant has not sustained its burden of showing the Examiner erred.

14 *Destruction of Ability to Function*

15 The Appellant argues that VBM requires that inputs to each node in a tree
16 arithmetically combine to produce an input to a higher level in the tree. The
17 Appellant contends that use of a neural network would destroy the ability to
18 arithmetically generate the numbers required at each tree node. The Appellant
19 similarly contends that the use of a tree would destroy the neural network's ability
20 to function (Br. 14:Bottom ¶ - 15:Top ¶).

21 We find that these contentions are all repetitions of those made under the rubric
22 of teaching away, *supra*, but couched as destroying the ability to function, and our
23 findings are the same. The Appellant has made no contention specifically
24 demonstrating that the combination of Bielinske and Brown would necessarily
25 destroy the abilities of their operation, particularly since Brown's neural network

1 might be used in performance of element [1.b.] and Bielinski's VBM in
2 performance of [1.c.] of claim 69, thus not requiring any overlap of their operation.

3 The Appellant has not sustained its burden of showing the Examiner erred.

4 *Failure to Make Invention as a Whole Obvious*

5 The Appellant repeats the arguments regarding teaching away and concludes
6 that the invention is therefore not obvious as a whole (Br. 15:First full ¶).

7 We find that these contentions are all repetitions of those made under the rubric
8 of teaching away, *supra*, but couched as making the invention as a whole obvious,
9 and our findings are the same.

10 The Appellant has not sustained its burden of showing the Examiner erred.

11 *Failure to Make Prima Facie Case for Obviousness*

12 The Appellant argues (1) there is no evidence for the motivation to combine
13 the references; (2) there is no reasonable expectation of success for the same
14 reasons the combination would destroy their ability to function; and (3) the
15 combination fails to include optimization techniques (Br. 15:Bottom ¶ - 16:Top
16 three ¶'s).

17 We find that both Bielinski and Brown describe analytical techniques
18 employed to find drivers for improving organizational performance. Brown
19 teaches that neural networks may be used to analyze past business transactions so
20 they can understand customers' buying patterns, whereas Bielinski teaches how
21 VBM sensitivity analysis of past results offers clues to what can be done in the
22 future and which value drivers should receive the most attention to achieve optimal
23 rewards. Thus both are directed towards analysis of past business operations to
24 offer clues to changing future operations to improve business performance. It

1 would have been obvious to a person of ordinary skill in the art to have adapted
2 techniques from each of Brown and Bielinski to provide the advantages of each
3 technique in improving overall performance.

4 The Appellant has not sustained its burden of showing the Examiner erred.

5 *Reply Brief*

6 We find that the Appellant has made general allegations that the combination
7 of Bielinski and Brown fails to teach or suggest any of the claim limitations of
8 claims 77-103 for the first time in the Reply Brief. A statement which merely
9 points out what a claim recites will not be considered an argument for separate
10 patentability of the claim. 37 C.F.R. 41.37(c)(1)(vii). A general allegation that the
11 art does not teach any of the claim limitations is no more than merely pointing out
12 the claim limitations. Thus, these claims fall along with claim 69.

13 The Appellant has not sustained its burden of showing that the Examiner erred
14 in rejecting claims 69-103 under 35 U.S.C. § 103(a) as unpatentable over Bielinski
15 and Brown.

16 CONCLUSIONS OF LAW

17 The Appellant has not sustained its burden of showing that the Examiner erred
18 in rejecting claims 69-103 under 35 U.S.C. § 103(a) as unpatentable over the prior
19 art.

20 On this record, the Appellant is not entitled to a patent containing claims
21 69-103.

1 DECISION

2 To summarize, our decision is as follows:

- 3 • The rejection of claims 69-103 under 35 U.S.C. § 103(a) as unpatentable
4 over Bielinski and Brown is sustained.

5 No time period for taking any subsequent action in connection with this appeal
6 may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

7

8 AFFIRMED

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11 vsh

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